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Master in Management Program

THE STUDY OF CUSTOMERS' ADOPTION BARRIERS OF MOBILE MUSIC STREAMING SERVICES IN RUSSIA

Master's Thesis by the 2nd year student Concentration — Master in Management Program,
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АННОТАЦИЯ

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Название ВКР	Исследование барьеров, препятствующих переключению клиентов на подписку услуг стриминга музыки в России
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Описание цели, задач и основных результатов	Цель: определить барьеры, препятствующие переключению клиентов на подписку услуг стриминга музыки в России Задачи: 1) Какие барьеры препятствуют переключению клиентов на подписку услуг стриминга музыки в России 2) Какие барьеры препятствуют переключению клиентов на платную подписку услуг стриминга музыки в России Результаты: 1) Существует четыре основных барьера, препятствующих внедрению в России услуг стриминга музыки: привычка “habit”, цена “price value”, социальное влияние “social influence” и предпочтения в пиратстве “piracy preference”. 2) Существует два основных барьера, препятствующих переключению клиентов на платную подписку услуг стриминга музыки в России: “price value” и предпочтения в пиратстве “piracy preference”.
Ключевые слова	Музыкальные стриминговые сервисы, единая теория принятия и использования технологий, принятие технологий.

ABSTRACT

Master Student's Name	Bobrov Maksim Sergeevich
Master Thesis Title	The study of customers' adoption barriers of mobile music streaming services in Russia
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Academic Advisor's Name	Alkanova Olga Nikolaevna, Senior Lecturer, Marketing Department
Description of the goal, tasks and main results	Goal: Identify the barriers that prevent the customers from subscription to mobile musical streaming services in Russia. Tasks: 1) What are the adoption barriers that prevent customers in digital music industry from switching to streaming music services in general? 2) What are the adoption barriers that prevent customers in digital music industry from switching to paid streaming music services? Results: 1) There are four main barriers preventing the adoption of streaming music services in Russia, namely habit, price value, social influence, and piracy preference. 2) There are two main barriers preventing the adoption of paid streaming music services in Russia, namely perceived price value proportion of streaming music services in Russia and strong preference to pirate behavior.
Keywords	Acceptance, acceptance barriers, UTAUT 2, streaming music services.

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INTRODUCTION TO THE RESEARCH

Research topic: The study of customers' adoption barriers of mobile music streaming services in Russia

The topic chosen for the further academic research meets current global consumer behavior trends, studies both vital and up-to-date practical issues within both the digital music industry globally and the digital music industry in Russia. Moreover, the research with this topic creates foundation for the further academic researches.

RELEVANCY OF THE TOPIC

There are four key arguments to the topic relevance.

Firstly, the topic meets current global consumer behavior trends

In accordance with KPMG and its comprehensive study (The truth about online consumers 2017) of the online consumer behavior trends, there are two most influential trends identified:

1. E-commerce is a constantly rising trend
2. Books and music is the most popular ecommerce product category in the world

To sum up, there is a huge global interest towards online shopping and, especially, to online music services. The topic of the academic research meets the global tendencies and customer product preferences. Thus, the topic seems relevant and actual from this broad prospective.

Secondly, the topic studies both vital and up-to-date practical issues within the digital music industry

First of all, the research topic studies the fastest growing revenue stream (music streaming services) within the digital music industry. The International Federation of the phonography Industry, IFPI, in its global music report (Global Music Report, 2017) states that the musical industry suffered the strong decline in a period from 1999 to 2014 years. By the end of that period, the financial results of the industry were 40% lower than those in the beginning. The further two consecutive years were more prolific for the industry and they resulted in the 6% annual growth rate (15,7 US$ billions globally).

That period of turbulence was characterized by the industry transformation. It changed the nature of the industry from physical to digital, customer preferences from downloads to streaming, and customer preferences from ownership to access. Finally, the industry has been changed to the one, which has the following revenue streams: digital (50%), physical (34%), performance rights (14%), and synchronization (2%).

In the recent years the growth of the industry was driven primarily by the digital revenue streams, which were responsible for the biggest input into the industry. The whole segment of the digital revenues recently grew by 17% and the majority of that was driven by the sub-segment called “streaming”, which was accounted for more than 70% of growth. Meanwhile the digital revenues were growing, the second biggest revenue streams, physical revenues, showed the negative trend for 3 consecutive years and recently dropped by 7,6%. The rest drivers of revenue showed the small increase in revenues with the regards to the last years.

Second of all, the research topic covers the recent customer preferences shift in the digital music industry. In accordance with PWC (Global review of entertainment industry and social media, 2016), the customers of digital music services are changing their preferences from buying the musical records towards subscribing to musical streaming services.

Third of all, the research topic covers one of the most controversial issues on ethics and sustainability within the industry. In accordance with the Recording Industry Association of America, RIAA, (Stephen E. Siwek, 2007) the US economy, which accounts for 75% of the whole digital musical market, loses because of the piracy 12,5 US$ billions of revenues and 2,7 US$ billions of profits annually. In addition to that, the piracy results in the loss of 71000 jobs within the economy.

The global industry players conduct the massive campaign aimed to enforce the anti-piracy legislation and to change the clients’ perception towards the piracy and the musical services. Generally, the industry is fighting against the common positive opinion on piracy and believes that it makes the society more responsible, ethical and sustainable. And the problem has not been fully resolved yet. In accordance with IFPI (Global music report 2017, 2017), the results indicate that more than the third if the internet users (and 50% of those are 16-24 y.o.) had illegally downloaded the content.

To sum up, the topic and the research itself may serve as a tool, which may help to unleash the potential of the digital musical industry by managing the impact of the piracy.

Thirdly, the topic studies both vital and up-to-date practical issues in the unique context of Russian digital music industry

First of all, the topic covers a fast-growing Russian digital music market and its fastest growing revenue stream. Vedomosti in its report (Golitsina A., 2017) says that nowadays Russian digital music market is the 25th biggest world digital music market. Three years in a row the market demonstrates the steady improvements (from 28th place in 2015 to 25th place in 2017). The market achieved 40% of annual growth in the period from 2014 to 2017. The growth rates

outpace the global growth rates. The streaming services in 2016 demonstrated 60,4% growth rate, which outpaced the global one.

Second of all, the topic explores the Russian digital music industry case, which differs significantly from the rest of the world. In accordance with Forbes (Ilichev, 2016), the volume of the digital music consumption on the Russian market is estimated to be among top-10 markets globally. However, the financial results of the market are significantly lower and guarantee only the 25th position in the world.

This mismatch is defined primarily by the enormously high level of copyright piracy in Russia. With regards to Forbes (Ilichev, 2016), 99% of digital music consumption in 2012-2013 in Russia was illegal and obeyed the copyright laws. From that time the government initiated the strategy, which implied the constant tightening of the copyright / anti-piracy legislation. There are several small improvements occurred but still the impact of the digital piracy is considerable enough. With regards to the industry experts, one of the main drawbacks is that the typical Russian consumer perceives the online music as a free rather than a paid service.

To sum up all the points, the topic seems valid and actual with regards to the realities of the Russian market of digital music, which is being transformed from the illegal to a more transparent environment. The market and the services offered are increasing their attractiveness because of the recently launched anti-piracy regulations. However, only the small percentage of the potential clients within the industry are switching from the learned consumer behavior of free consumption towards the new consumer behavior of paid consumption.

Finally, the topic creates foundation for the further academic researches

The popularity of the acceptance researches in the academic world is increasing as indicated by the review of the acceptance researches (Rad et al., 2017). However, there is a lack of the acceptance researches dedicated to studying music streaming globally. Moreover, there is no publicly available acceptance researches dedicated to studying acceptance and barriers preventing the acceptance of musical streaming services in the unique Russian context. Consequently, this research will bridge this gap and will create a fruitful foundation for other academic researchers studying the barriers that prevent the acceptance of streaming music services.

RESEARCH GAP

Russian digital music market consumers have enormous volumes of digital music consumption. However, the majority of the clients do not switch to streaming music services and, especially, to paid streaming music services due to a list of currently unidentified barriers.

Consequently, there is lack of knowledge concretely describing the precise barriers preventing the acceptance of music streaming services in Russia.

AIMS AND OBJECTIVES OF THE RESEARCH

Research Questions

3) What are the adoption barriers that prevent customers in digital music industry from switching to streaming music services in general?
4) What are the adoption barriers that prevent customers in digital music industry from switching to paid streaming music services?

The main goal of the research

The main goal of the research is to identify the barriers that prevent Russian customers from subscription to mobile musical streaming services.

Object of the research: Customer choices of using music streaming services.

Subject of the research: Factors affecting consumer behavior in digital music market.

RESULTS OF THE RESEARCH

There were two main research questions stated by the research. The following answers have been obtained after conducting the comprehensive review of existing practical and academic sources on the topic of acceptance, after developing the appropriate comprehensive empirical model, and after performing the statistical analysis to get the insights.

3) What are the adoption barriers that prevent customers in digital music industry from switching to streaming music services in general?

There are four main barriers preventing the adoption of streaming music services in Russia, namely habit, price value, social influence, and piracy preference. Each of the barriers has different determinants describing the concrete things preventing people from acceptance behavior. With regards to habit factor, the research indicates that such type of behavior has not become habitual or natural to people, people have not got addicted to use streaming music services in Russia. With regards to price value, people do not perceive value for money ration associated with streaming music services as high or neutral; they tend to perceive that in a more negative way. With regards to social influence, the research indicates that there is lack of people who are important to potential consumers and who believe that they should use streaming music services. Consequently, there is lack of influencers thinking and transmitting the idea that it is important to use streaming music services and that people should use streaming music services. With regards to piracy preference, people have a strong habit of downloading music for free and

of listening music in the internet for free. Consequently, people have a strong habit of listening to the music in the internet and a strong habit of not paying for that.

4) What are the adoption barriers that prevent customers in digital music industry from switching to paid streaming music services?

There are two main barriers preventing the adoption of paid streaming music services in Russia, namely perceived price value proportion of streaming music services in Russia and strong preference to pirate behavior. With regards to piracy preference, people have a strong habit of downloading music for free and of listening music in the internet for free. Moreover, people have a negative perception of the price value proportion associated with streaming music services.

CHAPTER 1. INVESTIGATION OF POTENTIAL ACCEPTANCE BARRIERS OF STREAMING MUSIC SERVICES IN RUSSIA

In this chapter the investigation of the potential acceptance barriers driven by the specifics of Russian digital music market will be revealed (§1.1.). Then, the investigation of the acceptance barriers driven by the specifics of streaming music services will be outlined (§1.2.). Then, the research hypotheses, which will describe the potential barriers preventing the acceptance of the streaming music services in Russia, will be derived and described (§1.3.). Then the model (§1.3.) will be chosen and adjusted to the research specifics outlined in first two sub-paragraphs of the chapter (§1.1 and §1.2.). By the end of the chapter, the research gap will be outlined and justified, the list of potential barriers will be formed, the model for the research will be chosen to test the hypotheses developed. The summary of the chapter will be provided in the sub-chapter dedicated to intermediate results (§1.4.).

§1.1. INVESTIGATION OF ACCEPTANCE BARRIERS OF DIGITAL MUSIC STREAMING SERVICES IN RUSSIA

This paragraph will investigate the potential acceptance barriers driven by the specifics of the Russian music streaming services industry. The paragraph is divided into two sub-paragraphs intended to investigate the industry-specific acceptance barriers (§1.1.1.) and the service-specific acceptance barriers (§1.1.2.). The comprehensive analysis is expected to cover all layers of potential barriers by following the top-down approach and is expected to result in a list of potential barriers by the end of the sub-paragraph (§1.1.3.).

§1.1.1. INVESTIGATION OF ACCEPTANCE BARRIERS INTRODUCED BY THE SPECIFICS OF DIGITAL MUSIC INDUSTRY IN RUSSIA

This sub-paragraph is aimed to define the digital music industry-specific acceptance barriers by conducting the critical analysis of the industry context. The investigation of the acceptance barriers driven by the specifics of digital music industry will be conducted first and then the investigation of the barriers by analyzing the key industry stakeholders' strategies will be performed.

Investigation of digital music industry acceptance barriers

In this part the introduction to the digital music industry specifics will be provided by defining the digital music industry, by pointing out its main services offered, and by depicting the conceptualized customer journey to obtain such services. By the end of this part, the main

information on main digital music industry's peculiarities required by the further parts of the report will be covered.

Investigation of digital music industry specific acceptance barriers

The International Federation of the Phonographic Industry (IFPI) (Global music report 2017: Annual state of the industry, 2017) defines digital music industry as a segment of the music industry responsible for providing two types of services either music downloading services or music streaming services.

The download music service (Harris., M., February 07, 2018) is the service of transferring the music via the internet into a device that can decode (usually MP3 format) and play the transferred file. The legal downloads provide the client with a very limited scope of digital rights towards the purchased object. The client, the author insists (Bott, E., 2011), cannot resell the purchased object, cannot legally lend the right to any third parties etc. A good example of such firms is Apple that offer the download music services through "Itunes".

The streaming music service (Harris., M., February 08, 2018) is a way of delivering music instantly without requiring the clients to download the streamed files from the internet. Such services can be used on practically all types of up-to-date devices. The most well-known global and Russian companies providing streaming music services are Spotify, Pandora, Apple Music, Yandex Music. Such services can be used on practically all types of up-to-date devices.

Ultimately, the broad scope of digital music industry with regards to the peculiarities of services offered introduce several new potential acceptance barriers, such as lack of appropriate devices decoding/playing music, lack of stable mobile internet connection, lack of internet traffic to get the music digitally, and lack of purchasing power to afford the services.

Investigation of customer journey specific acceptance barriers

This part will define the conceptualized customer journey of getting the digital music services and then will analyze what are the potential acceptance barriers resulted. The aim of this paragraph is to define the general, not specific barriers derived from the comprehensive analysis of Russian specifics, barriers driven by the main peculiarities of the digital music industry in general.

The simplified typical customer journey to get the digital music services, including streaming music services, is described in three simple steps. Firstly, the client uses her internet-connected mobile phone to choose the digital music service provider. Secondly, she is being charged a certain price (the type of the "price" and its amount varies among various business models) by the service-provider for the services offered. Thirdly, in the case of music

downloading services, the client downloads the files and then decode and play it with her device. However, in case of getting music streaming services, the client instantly gets the access to the music without downloading files to the mobile-phone. All such interactions are done in the legal environment stated by the government.

The customer journey description pointed out the context of providing the digital music services, including music streaming services. More specifically, the customer journey depicted major groups of stakeholders impacting the whole process of offering such services. There are four main types of the stakeholders, among them are the clients, the service-providers, the intermediaries (predominantly telecommunication companies providing the internet services), and the government. Thus, the impact of each stakeholders may significantly affect the context in which the services are provided. Consequently, the detailed description of stakeholders' impact will be provided to identify the specifics of Russian music digital music industry and then to identify the industry-wide potential acceptance barriers which can be driven by such specifics.

Ultimately, the analysis of the conceptual customer journey revealed that its every step may serve as a bottleneck/barrier preventing the adoption. More specifically, the analysis added several new acceptance barriers, such as the attitude towards conducting illegal action, the perception of whether the action is illegal, and whether the action intended to perform is ethical (even if it is illegal, whether should I perform the action because I need it?).

Acceptance barriers introduced by key industry stakeholders

In this part the analysis of the past and current strategies of key industry stakeholders will be conducted to define the digital music industry specific context, which will introduce a list of the most probable potential acceptance barriers for the further research. Each stakeholder will be analyzed separately, and the analysis will provide more information about the more concrete description of the stakeholder, about its strategy over time, and what are the potential acceptance barriers introduced. At the end of the part the information about how all the actions combined resulted in the figures of digital music industry in Russia will be provided.

Service Providers

The first group of stakeholders is service providers. Service providers are the companies offering the music downloading and music streaming services. Since the infancy of digital music industry and until 2014, the predominant part of the digital music content in Russia was consumed illegally. The experts estimate the rate of illegal digital music consumption to be around 80%-95% of the total market volume. The most impact to that dramatically high levels of piracy was made by Russian social network "Vkontakte", which is a Russian analog of

"Facebook". Despite the observable impact from the side of the legal service providers, such iTunes, Yandex music, and the rest, the piracy rates in Russia are extremely high.

Pavel Durov, the CEO of "Vkontakte", founded the web-site in 2007. Since 2007, Pavel Durov officially declared his position (Dowling, K., 2014) of supporting the piracy and the freedom of content sharing, including music. That position was coherent to the policy of the firm, which was one of the biggest web-sites in Russia, and it negatively affected the digital music industry in Russia and globally. As a result, the majors, which are the biggest sound recording firms in the world, sued "Vkontakte" due to the illegal content sharing and initiated the negotiations to change the official policy of the social network. At the same time, in 2013, the CEO of "Vkontakte" was changed. The new CEO and the new policy was announced. Even though the major changes in the strategy of "Vkontakte" were made around 2014, the piracy rates in Russia are still enormously high (70-80%).

Another remarkable group of players on the Russian digital music market was the companies, for example "Apple" with its "iTunes" or Yandex with its music download services, provided the legal content. Even though the services of iTunes were comparatively successful, they were not able to utilize their full potential on the Russian market due to "Vkontakte" policy, and thus the digital music piracy levels in Russia were not decreased significantly (Krivotulova, K., 2016). Frances Moore, who was the CEO of IFPI, said (Dowling, K., 2014) that legal services were not able to compete with "Vkontakte" since the latter undermined the competitiveness for which clients were willing to pay.

Around 2011, the group of streaming music service providers began to compete for the clients within the Russian digital music industry. The more detailed description of all the main music streaming services will be provided in the next sub-paragraph. The main idea here is that the music streaming service providers did not introduced any potential acceptance barriers.

The experts (Ilichev M, 2016) point out that during last four years (2013-2017) the overall landscape of the digital music industry in Russia has been improved. They have observed the shift of the service providers towards providing legal services and the experts have optimistic expectations about the continuation of that shift in the future. However, the world-class expert in piracy, Joe Carangi (Dowling, K., 2014) that there is no necessity to be overly optimistic about diminishing the piracy effects in Russian digital music because piracy in his opinion is deeply rooted in Russian consumer behavior. He believes that Russian people do not perceive the consumption of illegal content, including music, as something illegal or unethical. Consequently, since it has become a part of the culture, such issue will be very difficult to overcome rapidly.

Ultimately, one of the potential acceptance barrier can be related to changing the people's perception towards the illegal consumption of digital music and to changing the consumer

behavior pattern from consuming the illegal digital music towards consuming legal digital music services.

Telecommunication companies

The second group of stakeholders is the companies providing additional supportive services for clients getting the music services. Telecommunication companies, mobile-providers, were the companies that offered the clients the internet connection to get digital music services. Consequently, the brief overview of the telecommunication companies' strategies will be provided to identify whether their policies introduced the fruitful ground for possible acceptance barriers to flourish.

Telecommunication companies in Russia throughout the time offered high-quality services, including the internet services, for affordable price. The recent researches (Global Index Russia, 2018) indicate that the average speed of mobile internet in Russia values around 16,5 mbps. In 2016, practically all telecommunication firms in Russia decided to launch the unlimited tariffs (Sedov, K, 2017), which allowed the clients to use either phone calls or mobile internet services without limitations. In 2017, most of the firms decided to analyze the opportunity (Kolezev, D., 2017; Sedov, K, 2017) of no longer no longer offering the unlimited tariffs due to lack of expected business results obtained. However, many telecommunication companies have not yet taken the final decision on termination the offering of unlimited tariffs.

All telecommunication firms now see the growing consumption of digital music driven primarily by the consumption of music streaming services. Consequently, the firms try to grab such business opportunity and introduce new services that help the clients to get the most out of the digital music consumption. Among such services introduced are special tariffs offering either enlarged or unlimited internet traffic to consume music streaming services more comfortably.

The whole big four of Russian telecommunication companies, such as "Megafon", "MTS", "Beeline", and "Tele2" offered new special tariffs in the recent past.

Megafon ("Megafon.Music", 2017) offered three special tariffs allowing the unlimited traffic on different popular music streaming services like Yandex Music, Boom, Zvooq. The tariffs also provided ("Megafon", 28 November 2017) the special decreased price of the subscription to Yandex Music, Boom, and Zvooq.

MTS created ("MTS Music", 2017) "MTS Music", MTS's own music streaming platform, in a partnership with Yandex Music. MTS also offered 6 months of free internet traffic to stream the music for all new users.

TELE2 offered ("Zvooq for TELE2", 2017) similar tariffs suitable to music streaming. TELE2 provided special free subscription to Zvooq streaming music services.

Beeline offered (Unlimited Social Networks and Music, 2017) “Beeline.Music” service, which provided the clients with the unlimited internet traffic to use social networks and stream the music.

To sum up the result, the telecommunication companies in Russia are constantly improving services offered to the clients, such as the tariffs specialized on offering the opportunities to stream digital music, and thus the firms are decreasing the potential acceptance barriers without introduction of any new potential acceptance barriers.

Government

The third group of stakeholders is “Government”, the entity responsible for regulating the legal landscape. Digital music industry is not an exception and thus is regulated by the government.

Before 2013, the government did not proactively follow the anti-piracy strategy, but after 2013 and until now the government has put a lot of efforts in this direction. The government (“Anti-piracy Law in Russia”, 2013), in 2013, enacted the anti-piracy law, which was intended to defend the copyright holders from illegal distribution of copyright content on the territory of Russian Federation. Then the government amended the act and in 2015 (“Amended anti-piracy law”, 2015; “Russia: anti-piracy legislation affected music and soft”, 2015.). Then, in 2017, the government (Golitsina, 23 June 2017) amended the act and toughen the anti-piracy law.

The results of the anti-piracy law applied to the digital music industry are noticeable. Most of illegal content was deleted from Russia social networks. The web-sites specialized on the distribution of copyright content, for instance RuTracker etc., were blocked. Consequently, the government initiated the anti-piracy reforms.

Ultimately, the government now is toughening the anti-piracy legislations worsening the environment for the distribution of copyright content. Consequently, the government conducting the anti-piracy reforms diminishes the potential barriers preventing the adoption of music streaming services in Russia.

Results of the actions of Key industry stakeholders’

The action of all main stakeholders resulted to the following situation. Nowadays Russian digital music market is the 25th biggest world digital music market. Three years (Golitsina A., 2017) in a row the market demonstrates the steady improvements (from 28th place in 2015 to 25th place in 2017). The market achieved 40% of annual growth in the period from 2014 to 2017. The growth rates outpace the global growth rates. The streaming services in 2016 demonstrated 60,4% growth rate, which outpaced the global one.

In accordance with Forbes (Ilichev, 2016), the volume of the digital music consumption on the Russian market is estimated to be among top-10 markets globally. However, the financial results of the market are significantly lower and guarantee only the 25th position in the world.

Ultimately, there is a mismatch between the levels of digital music consumption volumes in Russia and the results obtained by the digital music industry in Russia. Consequently, digital music market in Russia currently does not unleash its full potential. There no official sources indicating precise barriers that prevent people from legal consumption. However, this analysis has revealed that ones of the most influential barriers can be related to extremely high rates of illegal content consumption, e.g. habit of consuming content illegally.

§1.1.2. INVESTIGATION OF ACCEPTANCE BARRIERS INTRODUCED BY THE SPECIFICS OF MUSIC STREAMING SERVICES IN RUSSIA

In this part of the thesis the investigation of acceptance barriers introduced by music streaming services specifics and current players' value proposition will be conducted. By the end of the part the expected outcome is to define the peculiarities associated with Russian music streaming services market and to derive the concrete potential barriers resulted from that specifics.

Music streaming service specific acceptance barriers

This part will introduce the information with regards to the acceptance barriers driven by the specifics of the streaming service nature by explaining the nature of such service. Then the potential acceptance barriers driven by the specifics of music streaming service nature will be outlined by explaining the concept of music servitisation and by defining the historical development of music service.

Streaming service specific acceptance barriers

Streaming audio can be defined (Harris M., February 08, 2018) as the process of delivering the sound, including music, without requiring a client getting the service to download the streamed files from the internet. There are several huge companies well-known globally providing the music streaming services, such as Spotify, Pandora, and Apple Music.

There are several types of streaming, such as the radio streaming services, podcast streaming services and the rest, but in this research the focus will be only on music streaming services.

Ultimately, this part introduces several potential acceptance barriers, such as the ones related to the "ecosystem" of the services provider, the perceived value of the service provided,

the perceived user experience, the perceived user interface and the overall perception of the brand of the service provider.

Music Streaming Service specific acceptance barriers

This part will introduce the acceptance barriers introduced by the specifics of the nature of the streaming music services. To begin with, brief evolution of the streaming music services will be outlined. Then, the potential acceptance barriers related to such specifics will be derived and described.

Nowadays, music is available to clients in two forms: as product and as service (Sandulli, F.D., & Barbero, S. M., 2004; Parry et al., 2012). A client can buy a physical CD or DVD, which is definitely a rare approach our days, a vinyl record, download the music digitally, and subscribe for the streaming services. The music industry indicators (Global music report 2017: Annual state of the industry, 2017) show the dramatic change of consumer preferences from digital music downloads towards digital music streaming. As a result, the overall music sale's experience has been transformed to meet the changed expectations of the clients.

The experience of sales in digital music industry has changed towards providing more services as a result of the phenomenon called "servitization". The classical authors (Vandermerwe and Rada, 1989) describe servitization as the movement from providing solely manufactured products towards providing the services related to such products. In digital music industry case the companies are shifting the focus from selling music as a physical product towards creating the value through offering the digital music services, which gives rise to various models of business, including several models of music streaming. The experts conclude that in creating a wide portfolio of ways to access the music, the phenomenon of music industry digital servitization has been progressing for a decade (Bustinza et al., 2015).

With the ongoing servitization of music industry, a physical product in most of cases is no longer existing meanwhile the digital music products, especially music streaming services, are gaining momentum (Bustinza et al., 2013b). Because of that shift, the importance of the ecosystem of streaming music services provider has become crucially important. Thus, the perceived usefulness of the whole ecosystem of streaming music service provider is playing one of the major roles in the service providers financial success and in consumers' acceptance rate.

Ultimately, there are several acceptance barriers that have been introduced by the specifics of streaming services and the idea of music servitization. Among such barriers are, the perception of the value transmitted by the ecosystem providing the streaming services. The more concrete barriers preventing the diffusion of the services can be related to the overall value

perception of the music offered, user experience, user interface, and the perception of brand of service provider in the context of other service providers.

Acceptance barriers specific to current players' value proposition

In this part the analysis of services offered on Russian market will be conducted. Firstly, a list of companies to be analyzed will be introduced. Then, each company will be analyzed separately. Finally, a list of potential acceptance barriers driven by the specifics of the competitive offerings will be derived.

Below the main players of the Russian digital music streaming market will be depicted. It is important to mention beforehand that several biggest global music streaming service providers, such as Spotify, Beats Music, iTunes Radio, Rhapsody, Amazon Prime Music, Sony Music Unlimited and Pando, are not on the Russian market and the analysis will not cover their offerings. There are four biggest industry players, such as Yandex Music, Google Play Music, Zvooq, and Boom that will be analyzed in a comprehensive manner.

Yandex Music

Yandex Music service was created in 2013. It started with a modest catalog of 800 thousand songs offered to the clients. By the end of 2013, it had grown practically 20 times to 17 million music tracks offered.

There are two versions of Yandex Music available publicly. The first one is the web-version, which is completely free. The second is the mobile-version one, which will be the core of the analysis in this part.

Mobile version has an extensive list of functionalities () available to the clients. Among the most value-adding features are the capability of downloading music tracks from "Vkontakte", the ability to listen to client's personalized music collection without the Internet, enjoy high-quality music streaming, listening to the music without ads' interruption for the subscription of 99 rubles a month.

In the recent past, Yandex Music has totally updated its platform. One of such updates was dedicated to the reference engine, which is responsible for recommending the playlists and music tracks to Yandex Music clients. The clients of the service hold the opinion that the reference system of Yandex Music is very successful and recommends the tracks in a very customized way suitable for them.

Google Play Music

Google Play Music is a music and podcast streaming service and online music locker operated by Google. The service was publicly launched in 2011.

Google Play Music allows the clients to upload up to 50 thousand tracks from their private libraries absolutely for free. Additional services, e.g. the paid-subscription, for 189 rubles a month, provide the users with the access to the streaming music services, which are provided in an advertisement-free way. New users are given a free monthly access to all the range of services offered by Google Play Music.

Apple Music

The service by Apple provides up to 45 million of tracks for its clients. The service always offers three subscription-free months to clients. The service provides the services in an advertising-free environment. The service always provides the additional features, such as the capability of downloading the tracks to be listened even without the internet.

There are several additional services offered by Apple Music, such as the unique videoclips containing the best from 1980-s till our days. The service always provides the feature of creating the playlists and listening to the lists of other people or the lists recommended by the Apple Music recommendation system. Furthermore, Apple music can be used even in a car through specially designed system.

The service is available for the following subscription-tariffs, which are 75 rubles/month for students, 169 rubles/month for the individual subscribers, and 269 rubles/month for the family-subscribers.

Zvooq

The streaming music services provider with a free access to streaming a comparatively large range of 15 million tracks.

The platform provides an accurate system of recommendations, appreciated by many users. The official web-site states that the music is provided in a very high-quality format. The platform provides the unlimited scrolling feature and the platform always provides everything in an advertising-free environment. In addition to that, Zvooq offers the first free trial month to new clients.

Boom

Boom is a music player created by the social network “Vkontakte”. This music player offers the service of legal listening to the music downloaded in “Vkontake” and “Odnoklassnki”.

Furthermore, the service offers the easy and quick access to “Vkontakte” playlists, personal recommendations, saving music for listening without internet, creating playlists, broad musical collection, interesting news and many more. The subscription for Boom will cost 149 rubles/month.

Aggregated potential acceptance barriers

Ultimately, the analysis of the current offers of music streaming services in Russia was sufficient to conclude that various complicated value propositions can serve as barriers preventing the clients from switching to music streaming services. It is possible that currently potential clients can lack the cumulative experience of consuming such services and thus the perception of the value offered is significantly lower than its real volume. Another group of potential acceptance barriers can be dedicated to the perception of particular characteristics of the service-provider, such as the width of the compositions base, the number and the perceived quality of playlists created by other users, moderators or celebrities, the price of the subscription, the perception of the quality of the recommendation system, and the additional features like downloading the sound list from “Vkontakte” or the ability to use the service in a car.

Summary of §1.1.

This sub-paragraph (§1.1.) has revealed the following peculiarity of Russian digital music market. There is a mismatch between the levels of digital music consumption volumes in Russia and the results obtained by the digital music industry in Russia. Consequently, digital music market in Russia currently does not unleash its full potential. There are no official sources describing precise list of barriers that prevent people from legal consumption of music content.

In this sub-paragraph (§1.1.) the investigation of the acceptance barriers introduced by both the specifics of digital music industry in Russia and the specifics of streaming music services in Russia has been conducted and has resulted into the list of potential barriers introduced below.

Table 1: The adoption barriers introduced by the specifics of Russian context

Part	Potential Adoption Barriers
Digital Music Industry specifics	Lack of appropriate devices, lack of stable mobile Internet connection, lack of internet traffic, lack of purchasing power
Customer Journey specifics	Attitude towards conducting illegal actions, the perception of the action's ethics
Music streaming service	Perception of the transmitted value, user experience, user interface, brand perception
Current players' value proposition	Perception of the complicated value proposition, lack of specific consumption experience, lack of compatibility among devices

The potential barriers mentioned ahead will be then merged with potential barriers derived from main acceptance models, which will be analyzed in the next sub-paragraph (§1.2) to form a comprehensive list of potential barriers which can prevent the clients from switching to streaming music services in Russia.

§1.2. INVESTIGATION OF THE DIGITAL SERVICES ACCEPTANCE BARRIERS

The main objective of the paragraph is to investigate the digital services acceptance barriers. There will be two sub-paragraphs, in which the first (§1.2.1.) will define the investigation of consumer behavior acceptance barriers and the second (§1.2.2.) will define the investigation of the digital services related barriers. By the end of the paragraph the expected outcome is to have the list of common digital service acceptance barriers, which can prevent the client from performing an intended action.

§1.2.1. INVESTIGATION OF CONSUMER BEHAVIOR ACCEPTANCE BARRIERS

The main objective of this sub-paragraph is to investigate the consumer behavior acceptance barriers by revising the classical literature sources on consumer behavior topic and then by revising the fundamental acceptance theories. By the end of this sub-paragraph the outcome expectations are to create a list of common consumer behavior acceptance barriers, which can block the client from performing the expected action.

Consumer behavior barriers

The main objective of this passage is to introduce the main types of barriers, which can be derived from the consumer behavior theory. The review of the main classical books on consumer behavior will be conducted to identify the barriers.

In accordance with the classical authors on consumer behavior topic (Hoyer, 2009), there are 4 main elements of consumer behavior, and consequently there are 4 main types of barriers, which impact the decision-making process of consumers. Among those four barriers are: the psychological core, the process of making decisions, the consumers culture, and the consumer behavior outcomes. All the barriers mentioned are the complex barriers, which means that every barrier consists of several sub-barriers, which, in turn, are also complex entities. The description of all the corresponding barriers and their sub-barriers will be provided below.

The first consumer behavior barrier is called “the psychological core”. The author (Hoyer, 2009) determines the psychological core as a mix of 5 segments of sub-barriers, which

can prevent the consumer from performing a specific action. The first group consists of motivation, ability, and opportunity. The second group consists of exposure, attention, and perception. The third one consists of knowing and understanding. The fourth one consists of attitude formation and change. The fifth one consists of memory and retrieval. Ultimately, all of them combined are expected to define the main psychology related barriers preventing the consumer from performing an action.

The second consumer behavior barrier is related to the decision-making process. The author (Hoyer, 2009) generalizes the steps of any decision-making process and states that on every decision-making step corresponding barriers may occur. The author understands the conceptual decision-making process as the sequence of the following steps: problem recognition, information search, judgement, decision-making rational, and post-decision process. Every component part of the process may introduce several specific barriers. Ultimately, understanding the decision-making process of consumers within a certain context may serve as a lucrative tool to define the barriers preventing the consumers from performing an action.

The third consumer behavior barrier is related to the consumer's culture. The author (Hoyer, 2009) suggests that the consumer's culture barrier can be split into its sub-barriers, which are the Consumer Diversity, the Social Class and Household Influences, Psychographics: values, personality and lifestyles, and the Social Influences. Ultimately, understanding the consumer's culture may serve as an effective tool to identify the barriers for not performing the intended action.

The fourth consumer behavior barrier is related to the consumer behavior outcomes. The author (Hoyer, 2009) implies that the outcomes can be split into its "component parts", which act the sub-barriers, in the following way. The author structures the outcomes using three main pillars. The first one is related to the adoption, resistance and diffusion of innovations barriers. The second one is connected to the symbolic consumer behavior barriers. For example, certain symbolic issues may prevent the action-maker from performing the action and vice versa. The third one is linked to the ethics and so-called "dark-side" of consumer behavior. Ultimately, understanding of the perceived consumer outcomes can serve as a very useful tool to define the barriers preventing the occurrence of the action.

To sum up, the classical authors suggest four types of consumer behavior driven barriers, such as the psychological core, the process of making decisions, the consumers culture, and the consumer behavior outcomes.

Investigation of the acceptance barriers

The main objective of this part is to identify the acceptance-driven barriers, which may prevent the consumer from performing the intended action.

The revision of the six main acceptance theories and thus the acceptance barriers will be conducted in this part. Among the theories to be revised are the diffusion of innovations (DOI), the theory of reasoned actions (TRA), the technology acceptance model (TAM), unified theory of acceptance and use of technology (UTAUT), and the task-technology fit theory. The revision of these relevant theories will create a solid ground for defining the conceptual model for the further researches.

The revision of the solid researches, which investigated issues similar to those of this research, will provide the additional credibility for using such theories and thus the conceptual model based on them to study the acceptance barriers. Consequently, the revision of the previously conducted researches will provide additional level of certainty with regards to the possibility to operationalize the conceptual model and to deliver the practical results.

Diffusion of innovation barriers

Diffusion of innovation theory (Rogers, 2003) is one of the most classical social sciences theory, which explains how the idea, or the product gaining ground and diffuses through a specific social system, e.g. population. The ultimate result of the diffusion is the adoption of an idea, product, or behavior by people. The author suggests that adoption should be treated as an act of performing a certain action in a different way than before (make a purchase of new product, perform another type of behavior, chose one type of product over another etc.).

The author says (Rogers, 11, 2003) that the diffusion process is the process by which an innovation is communicated through certain channels over time among the members of the social system. Consequently, the author implies that the diffusion process of four main elements, which in this particular research will be perceived as potential barriers for adoption. Thus, according to DOI, there are four main barriers for diffusion of innovations, such as innovation itself, communication channels used, time, social system. The detailed description of each barrier will be provided below.

The first adoption barrier is referred as “innovation”. The author suggest that an innovation is a product, object, or an idea that is perceived as new by a unit of adoption, e.g. individual. Consequently, the perception of an innovation is one of the crucial barriers to be taken into consideration with regards to the topic of the research. The author then mentions that perception of the innovation heavily depends on five main factors mentioned and described

below. Consequently, the success of the adoption depends heavily on how the barriers outlined below are managed.

1. *Barrier of the perceived relative advantage of the innovation*, which is the degree to which an innovation (idea, product, service) is perceived better than the preceded one. The higher the perceived relative advantage of the innovation, the higher the adoption rate will be.
2. *Barrier of the perceived compatibility of the innovation,* which is the degree to which the innovation is conceived as agreeing with the current values, experiences, and needs of potential adopters.
3. *Barrier of the perceived complexity of the innovation*, which is the degree to which an innovation is perceived as the one difficult to understand and to use. The innovations that are simpler to understand are perceived better and consequently adopter faster.
4. *Barrier of trialability of the innovation*, which is the degree to which an innovation can be used on limited basis. Generally, the innovations providing trailable are less uncertain and thus they are diffused faster.
5. *Barrier of the observability of the innovation*, is the degree to which the results of an innovation are visible others. Generally, the easier the adopters see the results of an innovation, the higher the chances for adoption are.

The author indicates that the higher the perceived relative advantage, trialability, and observability, the higher the adoption rate of the innovation. Meanwhile, the less the perceived complexity, the higher the adoption rate. To sum up, such characteristics should be treated as relevant potential barriers and later then will serve as hypothesis in this research.

The second group of adoption barrier refers to the second part within the definition of the diffusion of the innovations and describes the “communication channels”. The author defines the communication channels as the means by which the messages are going from one party to another. Ultimately, the author implies that the inappropriate communication channels chosen to communicate the information to adopters can serve as a huge obstacle, as a huge barrier to overcome.

The third adoption barrier is called “time” and implies that the diffusion of the innovation does not occur immediately. “Time” barrier depends heavily on several factors, such as the innovation-decision process used by the adopters, the innovativeness of a certain individual, the adoption rate of the innovations in a certain social system. The author breaks the normal distribution of adopters into several categories (from earliest to late adopters). Ultimately, time-frame can also serve a barrier preventing the adoption of some ideas, product, or services.

The fourth diffusion barrier of the innovation is called “a social system” and implies that the adoption depends heavily on how closely the component parts of a system cooperate with each other. The lower the boundaries among social structure elements, the higher the adoption. Vice versa, the higher the boundaries, the higher the barriers for adoption of an innovation.

The recent credible academic studies used the diffusion of innovations theory to research the adoption of several services. One of such researches (Chenhui Wu, 2004) studied the readiness model for adopting web-services. By the end of the research, the author concluded the most vital factors and consequently the main barriers impacting the web-services diffusion decision.

To sum up, the diffusion of innovations theory suggests that there are four main barriers, which may negatively impact the adoption rate of a certain product, idea, or service. Among those four barriers are innovation itself, communication channels used, time, social system.

Theory of reasoned actions (TRA)

Theory of reasoned actions (TRA), the widely used theory of planned behavior, was proposed by Martin Fishbein and Icek Ajzen (Ajzen & Fishbein, 1977, 1980; Fishbein, 1980; Fishbein & Ajzen, 1975) in 1980. The theory states that the human behavior is impacted by two vain determinants, such as the attitude (personal-level determinant) and subjective norms (social level determinants)

The theory proposes that the actual behavior of a person depends significantly on her behavioral intention, which, in turn, depends significantly by both attitude towards behavior and subjective norm. The authors suggest that the attitude of a person towards the behavior is determined by her beliefs and her evaluation of the expected consequences of such behavior. In addition, the authors point out that the subjective norm is determined by normative beliefs and motivation to comply. Thus, the authors conclude that the negative beliefs and the evaluations of the expected consequences may lead to not performing an action. Consequently, the negative beliefs and negative evaluations towards performing a specific action serve as barriers (Picture 1: Theory of Reasoned Action Barriers).

The first group of barriers suggested by the theory is related to attitude towards behavior and especially to the beliefs and evaluations of the consequences of people intended to perform an action. The authors define beliefs and evaluations as the subjective perception of the expected results obtained through performing a certain action.

The second group of barriers suggested by the theory is related to normative beliefs and especially to motivation to comply. The authors understand the normative belief as the

perception of individuals towards the extent to which people (relevant and important for the individual) think the individuals should or should not demonstrate a certain type of behavior.

The academic studies in the acceptance field often use TRA to research the diffusion of different entities. For instance, the study (Ludovica Cesareo, Alberto Pastore, 2014) investigated the attitude and behavior of the consumers towards the online music piracy and subscription-based services. The study explored 505 questionnaires using the used quantitative of research, which methodology was based on several theories including the TRA. Furthermore, other researches (Chiou et al., 2005; Shoham and Ruvio, 2008) also indicate that TRA is successfully applied to the context of digital piracy.

The study (Hampton-Sosa, 2017) investigate "the impact of creativity and community facilitation on music streaming adoption and digital piracy" and use in its methodology the TRA as one of the cornerstone theories. The author of the research always refers to classical authors (Al-Rafee & Cronan, 2006; Cronan & Al-Rafee, 2008), who state that TRA is one of the most widely used theory to investigate the acceptance behavior in the digital piracy context.

Ultimately, the theory proposes two main barriers, which may prevent the person from performing an action or demonstrating the behavior, such as the negative beliefs and negative evaluations towards the action or the behavior.

Theory of planned behavior (TPB)

The theory of planned behavior (TPB) (Ajzen, I. 1991) is an extension of the TRA (Ajzen & Fishbein, 1977, 1980; Fishbein, 1980; Fishbein & Ajzen, 1975). TPB suggests that the intentions to perform certain types of behavior depends significantly on three main determinants, such as the attitude towards the behavior, subjective norms, and perceived behavioral control. The author states (and the statement is empirically verified) that all three determinants together account for considerable variance in actual behavior of a person. Consequently, such determinants if affected may serve not only the positive function (increase the willingness to perform an action), but also a disturbing function of a barrier. Thus, it is possible to conclude that this theory introduces another barrier called "perceived behavioral control"

The author defines the perceived behavioral control as something that relates to the perception of people to perform an intended action. The author also adds that the perceived behavioral control is described by the overall set of control beliefs, which are the factors accelerating or blocking the performance of the behavior. Consequently, such barrier should also be taken into consideration as a potential barrier preventing people from doing a specific action.

The recent quantitative study (Magsamen-Conrad, 2015) on "Bridging the divide: Using UTAUT to predict multigenerational tablet adoption practices" used TPB as one of the

fundamental theories to base its methodology on. The results of the study suggested several determinants, which positively impacted the adoption practices. Consequently, the study using TPB in its methodology created a list of elements which can impact the acceptance. Thus, such elements may negatively impact the acceptance, so serve as barriers, and therefore will be included into the list of potential barriers in the further parts of the research.

To conclude, TPB introduces another potential barrier, which can prevent the diffusion of the idea, innovation, product, or service. The introduced barrier is the perceived behavioral control one.

Technology Acceptance Model (TAM)

The technology acceptance model (TAM) (Davis et al., 1989) is a theory implying there is a number of elements impacting the users offered with a new technology. The author points out two main elements, such as the perceived usefulness (PU) and the perceived easiness of use (PEOU), impacting the behavior. Consequently, such factors are serving also the role of the barriers preventing the users from performing a certain action.

The author defines the perceived usefulness (PU) as "the degree to which a person believes that using a particular system would enhance his or her job performance". In addition, Davis (Davis, 1989) suggests that perceived ease of use should be treated as "the degree to which a person believes that using a particular system would be free from effort".

The quantitative study (Jia-Jia et al., 2014) on predicting the motivation resulting in consumer's willingness to diffuse mobile services used TAM as the one of the fundamental theories to base the methodology of the research on. The study found that TAM is the significant predictor, so the theory is valid to use in the contest of mobile music acceptance issues including the barriers of acceptance.

The qualitative study (Ingham, J. et al, 2015) on e-shopping acceptance based its methodology on several theories including TAM. The research showed that TAM is the significant predictor and consequently can be used to discover the factors impacting the acceptance positively and impacting the acceptance negatively (barriers). (Picture 3: Technology acceptance model)

To sum up, if the clients perceive the usefulness of the technology on the low level and perceive the technology as hard to use, so such elements may serve as barrier decreasing the chances for successful acceptance.

Technology Acceptance Model 3 (TAM 3)

Technology Acceptance Model 3 (Venkatesh, V.; Bala, H. 2008) is the extension made out of the classical technology acceptance model. TAM 3 was proposed in the context of

electronic commerce (e-commerce) and included extra determinants, such as perceived trust and perceived risk towards the system to be used, impacting the diffusion of the technology (Picture 4: technology acceptance model 4). Consequently, such new determinants may serve as potential valid hypotheses later in the research.

To conclude, the perceived trust and perceived risk on the system or technology to be used in the e-commerce environment stand as potential barriers preventing the occurrence of certain actions.

Unified Theory of Acceptance and Use of the Technology (UTAUT)

The unified theory of acceptance and use of the technology (Venkatesh, V. et al, 2003) is a technology acceptance model suggesting that there are four basic elements, which also serve as barriers, impacting the consumer's behavior related to the usage of a certain information system. Among those four elements or barriers are the customers' expectations towards the performance, the expectations towards the required efforts, social influence, and facilitating conditions.

The theory implies that the performance expectancy, effort expectancy, and social influence (compliance, identification, and internalization) determinants belong to the group of usage intention barriers. While, the barrier called "facilitating conditions" refers directly to the user behavior barriers (Picture 5: UTAUT barriers).

The study (Koivimäki, T. et al, 2008) researched the perceptions of more than 200 individuals to identify towards mobile services in Finland. The methodology, based on the UTAUT, provided significant results describing that the skills and familiarity with the device used do have the impact on the perception of the used technology and thus on the acceptance rate. Consequently, such elements may serve as barriers for acceptance other technologies.

To sum up, UTAUT is the theory broadly used to investigate the acceptance barriers related to the diffusion of the technology. The theory introduces four main potential barriers, which may negatively impact on the successful diffusion. Among the barriers are performance expectancy, effort expectancy, social influence, and facilitating conditions.

Task-technology fit theory (TTF)

The task-technology fit theory (Dale, L. et al., 1995) implies that the information technology will have higher probability to be impact positively on the individual performance if it matches the tasks the user needs to perform using the technology. Consequently, if the information technology does not match the expectations of the users, it may create several diffusion barriers.

The recent studies (Zhou, T. et al, 2010) studied the mobile banking adoption using TTF and UTAUT in its methodology. The performance expectancy, TTF influence, and the

facilitating conditions demonstrated significant effect on users' diffusion. Consequently, if such elements are ignored, they may prevent the user from adopting the technology or service.

To conclude, TTF points out several barriers, which may prevent diffusion of the service, such as the task characteristics, technology characteristics, performance impacts, utilization.

§1.2.2. INVESTIGATION OF THE DIGITAL SERVICES SPECIFIC BARRIERS

The main objective of this sub-paragraph is to investigate the barriers related specifically to the nature of digital services. There will be three main steps to define the barriers. The first step will compare the digital services to the traditional services and traditional products. The second step will introduce the concept of servitization and then deduct the related to it barriers. The third step will introduce the concept of the goods-services continuum and will result in identification of potential acceptance barriers driven by the service type. By the end of the sub-paragraph the list of potential digital services acceptance barriers will be defined.

Digital services specific barriers

The main objective of this part is to define the barriers introduced specifically by the digital service peculiarities and characteristics. The process of investigating such determinants and thus barriers will consist of three steps. Firstly, the classic definition on the concept of "service" and "digital service" will be provided. Secondly, the key differentiators of digital services will be depicted. Thirdly, the acceptance barriers related specifically to digital services will be deducted.

Philip Kotler in his book (Gary M. Armstrong, P. Kotler 2014) defines the service as "any activity or benefit that one party can offer to another, that is essentially intangible and does not result in the ownership of anything".

Alan Hevner in his book (Alan Hevner, Samir Chatterjee, 2010) defines digital services as the services obtained through a digital transaction via the internet. The author also suggests a list of following differences between the digital and traditional services.

The channel for delivering a digital service is more restrictive than the one in a traditional service. The authors indicate that the digital service delivery method requires the user to be able to use the internet and to have the connection to the internet. Consequently, lack of computer-like equipment, lack of the access to the internet, and lack of internet usage skills may serve as potential barriers for accepting digital service.

The tangibility serves as the second differentiator of the digital service. The authors provided both classical and up-to-date definitions of the tangibility to define the differences. The classical definition understands the tangible assets as those possible to be perceived by the sense of touch.

However, currently the tangible assets are defined as the ones possible to be perceived by senses (not only by touch), e.g. know-how. Thus, the perceived lack of tangibility of digital service may negatively affect the acceptance and consequently serves as a potential barrier.

The idea of ownership is subtler including digital rights for a certain purpose versus outright ownership. The idea of ownership is interpreted differently by the traditional service and digital service worlds. Traditionally, the ownership definition was described as the act of possession on a certain entity. However, such interpretation does not perfectly work for digital entities. Currently digital rights have dissolved the boundaries between various stakeholders. Nowadays it has become extremely difficult to identify where the rights zone of one party ends and of another party begins. Consequently, the importance of ownership and the perceived ownership obtained through getting the service may serve as potential barriers for digital service acceptance.

The authors suggest that in digital services the importance of matching the overall needs of the clients is higher than the importance of personal relationships. Traditional services are often based on interpersonal relationships and sometimes they are more important than the value offered. However, in the digital service world, the digital service provider may even not know the client. Thus, the importance of matching specific needs is becoming crucially important. Consequently, lack of fit between digital service value proposition and the expectations of clients may serve as potential barrier for adoption that service.

To sum up, the authors introduce several peculiarities serving as potential barriers for service diffusion. Among the barriers are the lack of internet connection, the lack of skills to use the internet technology, the lack of tangibility and ownership, and lack of fit between the digital service value proposition and clients' expectations may serve as potential barriers for digital service diffusion.

Summary of §1.2

In this paragraph the revision of classical academic literature on consumer behavior topic, the revision of the widely-used acceptance theories, and the classical literature on digital services has been conducted. The revision of all information sources resulted in a list of potential consumer behavior- and digital services-driven acceptance barriers. The aggregated table of all the acceptance barriers and the sphere they were derived introduced below (Table 2: Table of aggregated potential digital services acceptance barriers).

Table 2: Table of aggregated potential digital services acceptance barriers

Concept	Adoption Barriers
Consumer Behavior	Psychological Core, Decision-Making Process, Consumers Culture, Consumer Behavior Outcomes
Diffusion of Innovations	Perception of Innovation, Communication Channels, Time, Social System
Theory of Reasoned Actions (TRA)	Attitude towards behavior, Subjective Norm
Theory of Planned Behavior (TPB)	Behavioral control, Attitude Towards Behavior, Subjective Norm
Technology Acceptance Model (TAM)	Perceived Usefulness, Perceived Ease of Use
Technology Acceptance Model 3 (TAM 3)	Perceived trust, Perceived risk, Perceived Usefulness, Perceived Ease of Use
Unified Theory of Acceptance and Usage of the Technology (UTAUT)	Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions
Technology-Fit Theory (TTF)	Task Characteristics, Technology Characteristics, Performance Impacts, Utilization

To sum up, in this paragraph the conceptual general digital services acceptance barriers have been revealed. Moreover, by that moment the potential barriers introduced by the specifics of digital music industry in Russia have been already covered. Consequently, there is necessity to find the appropriate acceptance model capable of examining the impact of such potential barriers on real actions of people who do not switch to streaming music services or paid streaming music services.

§1.3. DETERMINATION OF THE RESEARCH MODEL

This sub-paragraph is dedicated to determination of the research model used to reveal the barriers preventing the adoption of the streaming music services in Russia. To reveal the most appropriate model applied to the context of the research the following steps will be taken. Firstly, the comparison of all main acceptance models will be conducted to identify their peculiarities and constraints to match and compare them with those of research context. By the end of (§1.3.1.) part the theoretical model will be chosen. Then the adjustment of the model will be conducted in (§1.3.2.) to make the model more applicable to the research context. The next step will provide the development of the research hypotheses and corresponding conceptual research model to validate or disprove them (§1.3.3.).

§1.3.1. IDENTIFICATION OF THE ACCEPTANCE MODEL TYPE

The number of acceptance theories and models have been increasing since the information systems and technologies have become vital for the corporations to pursue their strategic objectives. The technology adoption (Khasawneh, 2008) is described as the diffusion or the first use of an emerged technology or product. The researches on technology diffusion are focused on understanding, predicting, and explaining variables that influence the adoption behavior at individual level to accept or reject the use of technological innovations.

The understanding of barriers which may prevent the clients from diffusion the technology will also rely on the acceptance models. The main acceptance models derived from the review of main technology adoption models and theories for the novelty technology (Lai, 2017) have been conceptually described in the literature review section. One of the most credible author in the acceptance researches (Venkatesh, 2003) also indicated that diffusion of innovations (DOI), technology acceptance models (TAM, TAM2, TAM3), theory of planned behavior (TPB), theory of reasoned action (TRA), task-technology-fit model (TTF), and unified theory of acceptance and use of technology (UTAUT, UTAUT2) are the most credible models studying the determinants of acceptance or non-acceptance behavior. Thus, the critical analysis of peculiarities of each model, including the advantages, disadvantages, and constraints, will be outlined to define the most suitable for the research purposes. The comparison table of all acceptance models will be outlined at the end of the part.

Diffusion of innovation

The theory of adoption and diffusion of innovations (Rogers E. M., 2003) is a credible academic theory describing either non-adoption or adoption of an innovation. The author

suggests that the diffusion appears following step-by-step consequential process when information and certain opinions with regards to the innovation are delivered through several communication channels. The author suggests five main steps to diffuse of reject the innovation, such as knowledge, persuasion, decision, implementation, and confirmation. The author argues that there is a long list of potential barriers, e.g. the ones derived from 5 crucial steps of adoption, potentially impacting the success of the adoption.

The author (Rogers E. M., 2003) suggests that there are five main types of variables determining the rate of adoption. The first one is the perceived attributes of the innovation, such as the relative advantage, compatibility, complexity, trialability, and observability. The second one is the type of innovation-decision, such as optional, collective, and authority-related one. The third one is the communication channels, such mass-media, personal, and the rest. The fourth one is the nature of social system to which the innovation is offered including the norms of the social system, the degree of network, the extent of interconnections among the social members. The fifth one is the extent of change agents' promotion efforts.

The authors (Al-Mamary, 2016) suggest that the theory of diffusion of innovations has several weaknesses. The first is that diffusion of innovation theory is focusing predominantly on the innovation meanwhile it is practically neglecting other macro-factors, including culture of the society, economic situation etc. The second one is that the theory (Ward, R., 2013) has difficulties of predicting the behavior of individuals and firms. In addition to that, the (Oliveira, T. and Martins, M., 2011) suggest that the theory does not work even at the individual level, so, it pretends to work only in the firm's environment. The third one is that DOI is more related to operate in the higher educational environment and thus cannot guarantee the valid results being applied to different contexts. Medlin (Medlin, B., 2001) also suggests that the most appropriate usage of the theory is in the environment of the higher education. The third is that the theory lacks some important specific aspects of the complex technologies' diffusion. Consequently, it is important to understand carefully the features of the technology, especially focusing the attention on learning curve features of the technology.

To sum up, the DOI theory will not be chosen for the research since the theory works best in the higher educational environment, which can introduce additional external validity issues of having the results not representative for the whole population in Russia. Consequently, since the study is aimed to investigate the barriers preventing the adoption of streaming music services in Russia and is intended to generate the results representative for the whole population, the DOI theory will not address this objective well and so should not be chosen as the method for the research.

Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB)

The theory of planned behavior has been extracted from the theory of reasoned actions. The Theory of planned behavior (Al-Mamary, 2016) is one of the most widely used approaches to study the diffusion. This theory follows the cognitive approach to determine and describe the behavior by focusing on the attitudes and beliefs of individuals.

Theory of planned behavior declares that the willingness to act depends on person's attitude towards performing the action, perceived behavioral control and the subjective norm. The theory perceives the people's control of their behavior as the something put on the continuum which starts from easily demonstrated behavior types and ends with behaviors requiring more efforts and resources. In this continuum the perceived behavioral control has a function of the proxy showing how easy for the person is to perform a certain behavior.

The theory has been applied to a very wide spectrum of behaviors to understand which people behave in which way. The academics suggest that this theory is one of the best-supported psychological and social theories to predict the human behavior.

There are several main assumptions of theory of reasoned actions and theory of planned behavior. Firstly, the theories assume that individuals are rational in thinking over their actions and in estimating the potential implications of their actions. Secondly, TPB presumes (Egmond, C. and Bruel, R., 2007) that consumers make decisions by conducting the cost-benefit analysis over different scenarios of their actions to choose the option maximizing the expected net benefits.

There is the main constraint associated with the theory. The theory belongs to the group of rational choice models, which implies that the model is applied to the people who are not obliged to use the model. Thus, the theory is well-used only in situations, in which people can chose whether to use the product/service or not.

To sum up, the TRA and TPB are widely-used credible academic models to study the behavior of people and especially their diffusion behavior. Despite its credibility, the TRA and TPB will not be chosen for the further research since there are more up-to-date tailored to the specifics of the research models existing.

Technology Acceptance Models

Technology Acceptance Model (TAM) is the most widely-used acceptance model (Al-Mamary, 2016) in the world. It is intended to predict the acceptance of information systems (IS) and information technology (IT) by individuals. The model is widely used to define the

determinants impacting the acceptance or non-acceptance of IS or IT. The main variable of the model are the perceived ease of use and the perceived usefulness.

The (Rad et al., 2017) widespread appreciation of the TAM is driven by model's simplicity, empirical foundations proving the validity of results, and model's applicability to different to different environments. Ultimately, the model is perceived as the both simple and valid model to study the acceptance behavior of information services and information technologies. However, the simplicity of the model can be perceived as the drawback showing that the model is not comprehensive enough to conduct the detailed study on acceptance topics including the study on identification of barriers preventing the diffusion of streaming music services in Russia.

TAM had certain extensions (Marangunic and Granic, 2014), specifically, TAM 2 and TAM3. The description of TAM2 will be avoided since TAM 3 have included the unique peculiarities of TAM2.

The authors (Venkatesh and Bala, 2008) merged TAM2, an extension of TAM, and the model of the determinants of perceived ease of use. By the results of the merger, the authors obtained the model called TAM3. The model has three main factors affecting the acceptance or non-acceptance behavior, including the factors of perceived ease of use and perceived usefulness, computer anxiety and perceived ease of use, and perceived ease of use and behavioral intention. The studies (Al-Mamary, 2016) suggest that several relationships in the TAM3 have not been proven empirically in a wide range of researches conducted in different contexts. Consequently, there is a risk of using TAM3 due to possibility of getting non-valid research results. In addition, the results of the study (Rondan-Cataluna, 2015) indicate that TAM developments do not increase the explanation power of the model.

The research (Rondan-Cataluna, 2015) also indicate that TAM is applied to the organizational context, e.g. the university or organizational environment obliging the employees to use the technology. Consequently, the models should be applied to this particular research studying the barriers of the acceptance of the technology on the voluntary basis.

To sum up the results, Technology Acceptance Models (TAM, TAM2, TAM3) will not be chosen for this particular research for four main reasons. Firstly, the academic world is already full of researches based on TAM. So, the decision to use TAM will not lead to enhancing the academic value of this research. Secondly, the TAM models are too simplified. Consequently, the TAM models may not provide the most accurate and credible research results focusing on a very specific issue. Thirdly, several relationships in TAM3 have not been proven empirically. So, the research results may be biased. All of the above leads to the conclusion that the models will not be able of answering the research question in the most effective way.

Fourthly, TAM models are recommended to apply into the organizational context meanwhile the context of this research is non-organizational one.

Task-Technology Fit (TTF)

Task-technology fit is the model (Goodhue and Thompson, 1995) examining the relation between the individual performance and the information systems. The idea is simple, the adoption or non-adoption of technology depends on how the technology solves the tasks vital to the clients.

The authors (Goodhue and Thompson, 1995) suggest that TTF is well-applied to tasks of testing the existing apps or technologies. However, the model will introduce the discrepancy or the fit between the clients' expectations towards the technological performance characteristics and real technology characteristics. Consequently, the major focus will be to understand whether the technology fits to the needs of clients or not. However, as suggested in literature review of this research, there are more potential barriers impacting the acceptance or non-acceptance of the streaming music services in Russia. Thus, the TTF with its focus on the fit between the clients and technology may ignore several existing barriers preventing the clients from adoption of streaming music services in Russia.

To sum up, task-technology fit will not be chosen for the research as the primary method due to its very specific and narrowly focused approach. Consequently, the TTF will not be the tool effectively answering the main research questions.

Theory of Acceptance and Use of Technology (UTAUT, UTAUT2)

The understanding of the acceptance or non-acceptance behavior of the information services and information technologies has become more vital than ever before. The companies are trying to understand the barriers preventing people from switching towards certain services. As a logical response (Rondan-Cataluña, 2015) from the academic world, the number of researches on acceptance is raising. Many academics tried to merge different concepts to identify the concrete drivers impacting the consumers diffusing the technologies or services. However, many researches created either conceptual (not verified empirically) or ad hoc models resulted in lack comprehensive empirically verified models developed by credible academics. Often academics mixed the concepts without critical analysis of various alternatives and those practices led to the models far from providing the optimal non-biased results. There was a lack of unified model to study the acceptance of technology.

Venkatesh (Venkatesh et al., 2003) critically reviewed the literature, including the previously widely used classic academic models, such as the TRA, TAM, TPB, TRA, DOI, and

the rest. The authors using the empirical methods compared the models to each other and then developed the unified model uniting the elements from all compared models. Then, the authors empirically verified the model and realized that the model was responsible to predict in a more accurate way than any of chosen. The model (UTAUT) got the synergetic effect from all its components and demonstrated the highest exploratory power among the existing models.

UTAUT (Venkatesh et al., 2003) depicted four main constructs playing the vital role in determining the user acceptance and non-acceptance. Among the constructs were performance expectancy, effort expectancy, social influence, and facilitating condition. Those four factors directly affected behavioral intention and thus can be used to determine the barriers preventing the performance of a certain action.

UTAUT has pointed out the most important factors, which can serve as barriers, affecting the diffusion of the technology. The model has proven its effectiveness and accurateness and the acceptance and is perceived as the benchmark or the best practices to investigate the accepting behavior. Even though many researchers applied UTAUT to study the acceptance behavior in non-organizational context, the authors of UTAUT recommend using it primarily in the organizational contexts. So, this constraint of the model should be met and the extension of UTAUT is required to be found.

To sum up, UTAUT will not be chosen for the research since it is recommended to applied to the organizational context, which differs from the non-organizational context of the research. Thus, UTAUT may produce the biased results and so it will not guarantee to effectively tackle the main research question.

Unified Theory of Acceptance and Use of Technology 2 (UTAUT2)

The authors of UTAUT (Rondan-Cataluña, 2015) recognized the necessity of extending the UTAUT model to be used in the context of consumer technologies. There were three (Venkatesh et al., 2012) additional determinants of behavioral intention added to the constructs already included into the model. Among those determinants added were price value, habits, and hedonic motivation. Consequently, the model included different factors specific to the context, in which the client is eligible to choose whether to use the technology or not.

The UTAUT2 (Venkatesh et al., 2012) has been empirically verified. The model has produced the representative internally and externally valid results. In addition, the accurateness of the model was significantly higher than that of previously applied models. Consequently, the model guarantees the best methodology to predict the acceptance or non-acceptance of the information services and information technologies in the non-organizational context.

Ultimately, UTAUT2 will be chosen for the further research for the following reasons. Firstly, UTAUT2 guarantees the representativeness of the results obtained. Secondly, UTAUT2 is recommended to be applied to non-organizational context of the research. Thirdly, UTAUT2 is the most up-to-date comprehensive model to study the acceptance behavior, including the study of potential barriers. Fourthly, UTAUT2 does not introduce any additional constraints inapplicable to the research contest. To sum up, UTAUT2 will be the most effective model to empirically define the barriers preventing the acceptance of streaming music services in Russia.

Comparison table of main acceptance models

In this part the table aggregating the previously described comparison of main acceptance models will be provided. The table contains the peculiarities of the following models: Diffusion of Innovation (DOI), technology acceptance models (TAM, TAM2, TAM3), theory of planned behavior (TPB), theory of reasoned action (TRA), task-technology-fit model (TTF), and unified theory of acceptance and use of technology (UTAUT, UTAUT2).

Table 3: Comparison table of main acceptance models

Name of the model and year	Model's peculiarities	Applicability to the research context
DOI (1962)	• Overly focus on innovation and neglection of macro factors • Difficulties of predicting the behavior of individuals and firms • Does not work well at the individual acceptance level • Lacks important specific aspects of the complex technologies' diffusion	The model is **not chosen** since it: • Does not fit research context • Does not fit to streaming music services • Can introduce external validity problems
TRA (1980), TPB (1991)	• One of the most widely used acceptance theory • Can be applied to examination of rational behavior (free-choice) • Easy-to-apply, e.g. not a long list of factors to be examined • Assumes rationalism of individuals performing a behavior (e.g. individuals conducting rational cost-benefit	The model is **not chosen** since it: • Lacks comprehensiveness • Overly standardized • Too classical (too old) • Assumes not valid for the research context assumptions. Consumers can lack prior using experience and thus cannot adequately compares the

	analysis of different actions scenarios)	alternatives based on cost-benefit
TAM (1989), TAM2 (2000), TAM3 (2008).	• One of the most widely used acceptance theory • Intends to predict the acceptance of information systems (IS) and information technology (IT) by individuals • Determines the acceptance or non-acceptance of IS or IT • Simple empirically proven model (TAM) • Recommended to apply into the organizational context	This model is **not chosen** since it: • Academic world is full of TAM-based researches • Is not comprehensive enough • Is recommended to be applied into organizational context meanwhile the research context is wider and not limited by only organizational scope
TTF (1995)	• Focus solely on understanding the match between the expectations of clients and the technology • Easy to proceed	This model is **not chosen** since it: • Has the very narrow and specific focus of research
UTAUT (2003)	• Comprehensive classical unified acceptance model • Empirically proven • Determines the acceptance or non-acceptance of IS or IT • Can be adjusted/modified to research context by adding constraints • Focuses on acceptance in organizational context	This model is **not chosen** since it: • Is recommended to be applied to organizational context, which differs from the research context
UTAUT2 (2012)	• The most comprehensive classical unified acceptance model • Empirically proven • Determines the acceptance or non-acceptance of IS or IT • Focuses on acceptance in context of consumer technologies • The highest prediction power among	This model is **chosen** for the further research since it: • Has the highest exploratory and predictive power • Provides externally and internally valid results • Can be adjusted to the research context by extending the model

	acceptance models • Does not introduce any additional constraints inapplicable to the research contest • Can be modified • The most up-to-date comprehensive model to study the acceptance behavior, including the study of potential barriers	with several constraints • Has empirically proven classic questionnaire offered by authors • Is recommended as benchmark model to study acceptance behavior, including barriers • Perfectly meets the objectives and constraints of the research and specifics of streaming music services

As suggested by the table, UTAUT2 will be chosen for the further research for the following reasons. Firstly, UTAUT2 guarantees the representativeness of the results obtained. Secondly, UTAUT2 is recommended to be applied to non-organizational context of the research. Thirdly, UTAUT2 is the most up-to-date comprehensive model to study the acceptance behavior, including the study of potential barriers. Fourthly, UTAUT2 does not introduce any additional constraints inapplicable to the research contest. To sum up, UTAUT2 will be the most effective model to empirically define the barriers preventing the acceptance of streaming music services in Russia.

§1.3.2. Adjustment of UTAUT2 model to the research context

In this subsequent part of the research the comprehensive description of the constraints of the chosen model will be provided. Then the additional constraints will be added to the model to adjust it to specifics of this research. In the end of this sub-paragraph the conceptual model will be depicted.

Description of UTAUT2 constraints

In this part the description of UTAUT2 acceptance model constraints will be provided. UTAUT2 includes the following constraints: performance expectancy, effort expectancy, attitude toward using technology, social influence, facilitating conditions, hedonic motivation, price value, habits, behavioral intention, use of the IS or IT. Thus, all of the constraints will be defined below.

Performance expectancy (PE)

Performance expectancy (Venkatesh et al., 2003) is described as the extent to which the person believes that using a particular internet service (IS) or information technology (IT) can help her to get the improvements in job performance. The research (Malik, 2017) indicates that the consumer is more attracted to the app improving her productivity in terms providing her with better knowledge of the content, in terms of keeping her more aware about the content than others, and in terms of providing her with well-working app. These attributes will form the basis for the further developments of scales tested by the questionnaire.

Effort expectancy (EE)

Effort expectancy (Venkatesh et al., 2003) is described as the extent of ease associated with the use of IT or IS. The research (Ghalandari, 2012) indicates that any app is perceived by consumers as useful if the consumers can use the app without efforts. The research (Malik, 2017) indicates that the user-friendly apps have higher chances to be diffused by consumers. Consequently, if the clients found the app to be easy to use, the interactions with app as clear and understandable, the learning process of how to use the app as easy, and the way to become skillful at using the app as the easy one, then the behavioral intention to adopt the app will be increased. However, these questions can also identify the barriers preventing the adoption in case they identify the bottlenecks relevant for the clients. These attributes will form the basis for the further developments of scales tested by the questionnaire.

Social Influence (SI)

Social influence (Venkatesh et al., 2003) is the constraint defining the degree to which a person believes that important for him people think he needs to use the IT or IS. Social influence (Malik, 2017) is one of the most crucial factors in marketing impacting the consumer behavior. Consumer behavior is highly affected by the opinions, reviews, posts of colleagues, friends, relatives, influencers, and by many other people. The consumers who are a part of the social networks are more influenced and thus have higher chances to adopt the app. In this research the attempt to figure out whether the consumers believe that people who are important to them/who influence their behavior/whose opinions they value think/prefer that the consumers should use the mobile apps. These attributes will form the basis for the further developments of scales tested by the questionnaire.

Facilitating conditions (FC)

Facilitating conditions (Venkatesh et al., 2003) are the constraints defining the extent to which a person thinks that there are technical and organizational infrastructures exist to support

the use of IS or IT. Facilitating conditions mean (Malik, 2017) that consumers have all resources and knowledge required to use the technology. The author insists that internet connectivity is a vital factor to use the app. In addition, the literature review revealed the high speed of mobile internet and the volume of mobile internet traffic possessed are also the vital characteristics of facilitating conditions. In this research the investigation will be conducted on whether the clients have enough resources/knowledge to use mobile app, whether the streaming music services are compatible with other technologies the clients use, and whether they can get the help from others in case of facing difficulties using the streaming music apps.

Hedonic motivation (HM)

Hedonic motivation (Venkatesh et al., 2012) is the constraint defining the fun and enjoyment obtained from using IS or IT. The study (Malik, 2017) suggests that the drivers of hedonic motivation may vary due to the type of the app. There are two types of the app: utilitarian and hedonic apps. Utilitarian apps are the ones used primarily for information seeking. The author pointed out that user interface, perceived ease of use, and performance expectancy will be crucial factors impacting the hedonic motivation. Hedonic apps are used predominantly to conduct activities like networking or entertainment. Since, the music streaming apps are the hedonic apps, the specifics associated with the app type will be important for the further research. The author (Malik, 2017) suggest that in case of hedonic apps emotions, enjoyment, and achievement will be important. Consequently, in the further parts of the research the investigation will be conducted on whether the usage of streaming music services in Russia is perceived as a funny/enjoyable/entertaining activity. These attributes will form the basis for the further developments of scales tested by the questionnaire.

Price Value (PV)

Price value (Venkatesh et al., 2012) is the constraint defining the extent to which an individual perceives the price correctly representing the expected value from IS or IT. This characteristic is one of the three new introduced by UTAUT2. In this research the investigation on whether music streaming services are perceived as reasonably priced, as ones with good value for money, and as ones with the current price providing a good value, will be conducted. These attributes will form the basis for the further developments of scales tested by the questionnaire.

Habit (H)

Habit is the constraint (Venkatesh et al., 2012) showing the extent to which an individual tends to perform behaviors reflexively because of previous learning. This characteristic is one of the three unique characteristics introduced by UTAUT2. In this research the investigation on

whether the use of music streaming services has become a habit for an individual, whether he is addicted to using music streaming services, and whether he is planning to continue music streaming services frequently. These attributes will form the basis for the further developments of scales tested by the questionnaire.

Behavioral Intention (BI)

Behavioral intention is (Venkatesh et al., 2003) the extent to which an individual is eager to perform a behavior. In this research the investigation on whether the individual intends to continue using mobile streaming services in the future, always try to use mobile streaming services in his daily life, plans to continue to use music streaming services frequently, will be conducted. These attributes will form the basis for the further developments of scales tested by the questionnaire.

Use (U)

Use is the constraint (Venkatesh et al., 2003) describing the frequency of using a particular IS or IT. The investigation on frequency will be conducted by understanding the number of times the individual uses the service per day. These attributes will form the basis for the further developments of scales tested by the questionnaire.

Moderating Variables (Age, Gender)

The author (Venkatesh et al., 2012) outline three additional factors which may potentially indirectly impact the adoption. Among them are age and gender. Thus, they should be included into the further research.

To sum up the result, the UTAUT 2 acceptance model has 9 main factors which are the potential adoption barriers to be validated. Furthermore, the model has 2 additional factors indirectly impacting the behavioral intention and then the use behavior. The model will be able to identify the concrete impact from each of the factor and thus will answer the main research question resulting in listing the barriers preventing the acceptance of streaming music services in Russia.

Extension of UTAUT2 with new constraints

The constraints of UTAUT2 has covered the majority of potential barriers revealed by literature review section. However, several barriers, including the “tangibility preference” barrier and the “Piracy preference” one, cannot be covered by classical UTAUT2 model. Consequently,

there is the necessity to extend the model by two additional constraints, which are “tangibility preference” and “Piracy preference”, to adjust the model to the specifics of the research.

The authors of UTAUT2 (Venkatesh et al., 2012) has mentioned that the model can be modified by some relevant factors that may help to increase the applicability and accurateness of the prediction power of the model. In addition to that, the extension of the model by several new constraints will not introduce any questionnaire specific and thus result-representativeness specific issues due to the existence of the classical questionnaire capable of being adjusted to different contexts and topics to result in representative outcomes. For instance, the research (Shafinah et al., 2013) analyzed more than 100 adoption studies of mobile services, including those used UTAUT2, and revealed that academics tend to extend the models to adjust them to the specifics of their researches without biasing the results. Moreover, the academics, e.g. the study (Vinnik, 2017) extended the UTAUT2 model with “online ranking” as an additional constraint. Another example is the research (Alalwan et al., 2018) on defining the factors impacting the clients’ intentions and adoption of internet banking extended the UTAUT2 model with additional “risk” constraint. Ultimately, the extension of UTAUT2 is a widely-used practice among the academics studying the adoption behavior. Consequently, the UTAUT2 model in this research will also be extended by two additional constraints, such as “tangibility preference” and “Piracy preference” that will be described below, to adjust the model to the specifics of the research.

Tangibility Preference (TP)

The paragraph dedicated to investigation of the potential barriers driven by the specifics of services nature has shown that one of the most important potential barrier is the lack of tangibility associated with streaming music services. The study (Helkulla, 2016) examining the intention of consumers to subscribe to music streaming used UTAUT2 and extended the model with “tangibility preference” constraint. The authors defined tangibility preference as the extent to which people prefer tangible music formats to non-physical music ones. Like that research, this research will modify UTAUT2 with “Tangibility Preference” constraint. This constraint will define how important for clients is to have the music in physical formats, whether they perceive physical formats as more real and genuine, and whether they prefer to store music as physical or digital files. These questions will lay the foundation for the questionnaire.

Piracy Preference (PP)

The paragraph dedicated to investigation of the potential barriers driven by the specifics of services nature has shown that one of the most important potential barrier is the habit of downloading the music through pirate sources.

The ownership constraint defines the extent to which an individual tends to perform behaviors reflexively because of previous learning. Especially, this constraint will define how reflexively people listen to the music in the internet using the pirate sources. This constraint will define how natural to people is to listen or to download the music for free. Moreover, it will test whether it is habitual for people not to pay for the music in the internet. These questions will lay the foundation for the questionnaire.

To sum up the result, the extension of UTAUT2 model by two additional constraints will make the model adjusted to the specifics of Russian market and thus it will increase the predicting power of the model improving the accurateness of the results obtained.

§1.3.3. DEVELOPMENT OF THE CONCEPTUAL RESEARCH MODEL

This part will describe the development of the research hypotheses and then will depict the conceptual model to be used in the next chapters to validate or disprove hypotheses to identify the streaming music services acceptance barriers in Russia.

Development of the research hypotheses

This part will be dedicated to the development of the research hypotheses tested further within the research. The development of the hypotheses will be based on the potential barriers identified in first two sub-chapters (§1.1 and §1.2).

Overall the hypotheses are developed in accordance with the chosen UTAUT2 model. The first, the second, and the third hypotheses will be dedicated to the information obtained through the analysis of the music streaming specifics and current players value proposition.

The analysis mentioned above allows to conclude that the target audience could not switch to music streaming services if it did not perceive the performance characteristics as valuable. In addition to that, the customers could not switch to the services in case of perceiving the price as inappropriate one. Moreover, the clients could not switch to the new technology in case of having lack of specific consumption experience of lookalike services and thus efforts to effectively use the service as high. Consequently:

H1: Low perceived performance of music streaming services decreases the behavioral intention to accept the music streaming services.

H2: Low perceived price value of the services decreases the behavioral intention to accept the music streaming services.

H3: High perceived effort expectancy to use the services decreases the behavioral intention to accept the music streaming services.

The fourth hypothesis will be dedicated the information revealed from the analysis of digital music industry specifics. It was revealed that lack of appropriate devices, acceptable speed of mobile internet, lack of internet traffic available could decrease the intention to diffuse the services. The UTAUT model labels such characteristics as “facilitating conditions”.

H4: Low level of facilitating conditions decreases the behavioral intention to accept the music streaming services.

The fifth and sixth hypothesis will be dedicated to the information revealed from the analysis of customer journey specifics. It was revealed that a lot of stakeholders could impact the decision on whether to adopt the streaming music services or not. Specifically, the valuable and trustful people for the consumer can impact her diffusion decision. Moreover, it was highlighted that the whole industry tries to decrease the rate of piracy consumption. However, it still can have its effect and serve as a barrier because it can already be deeply rooted into the consumer behavior patterns of the customers.

H5: Social influence can decrease the behavioral intention to accept the music streaming services.

H6: Piracy preferences could decrease the behavioral intention to accept the music streaming service.

The seventh hypothesis will be derived from the description of UTAUT2 model. The UTAUT2 model introduced the necessity to validate whether consumers perceive the process of listening to music as hedonically pleasant process. Conversely, whether the hedonic motivation serves as the barrier or not.

H7: Low hedonic motivation decreases the behavioral intention to accept the music streaming services.

The eighth hypothesis will be derived from the part analyzing the digital music service specific barriers. It was highlighted that customers can reduce the services due to the lack of tangible value perceived.

H8: High tangibility preferences decreases the behavioral intention to accept the music streaming services.

All of the hypothesis will be further tested by the acceptance model, which will be developed in the next chapter.

Development of the conceptual model of extended UTAUT2

In the previous parts of this sub-paragraph the comparison of all main acceptance models has been conducted. The results of the critical analysis of the acceptance models led to choosing UTAUT2 model for the further research. Then the model was extended by several additional constraints, such as “tangibility preference” and “ownership preference”. The following conceptual model has been created (Appendix 1: Conceptual UTAUT 2 Extended).

Summary of Chapter 1

In this chapter the research gap, the list of potential acceptance barriers introduced by specifics or Russian market of streaming music services, the acceptance model to reveal and empirically verify the barriers, and the research hypotheses to be tested have been developed and outlined.

The chapter has revealed and proven the research gap, which is a list of unidentified barriers preventing the acceptance of streaming music services in Russia.

The chapter has compared major acceptance models and justified the necessity of using UTAUT2 acceptance model as the most credible, empirically verified model with the highest prediction power. Moreover, the model has been modified with two constraints to meet the research context better and to provide more valid results (Appendix 1: Conceptual UTAUT 2 Extended). There will be 8 main research hypotheses tested in the further parts of the research.

The methodology of validating the hypotheses will be described in Chapter 2.

CHAPTER 2: DETERMINATION OF THE RESEARCH DESIGN

In this sub-paragraph the two major parts will be described. Firstly, the process of designing the questionnaire will be depicted in a detailed manner (§2.2.1.). Secondly, the determination of the tools to analyze the data obtained through questionnaire will be outlined (§2.2.2.). By the end of the chapter the aggregated description of the methodology will be outlined (§2.2.3.)

§2.1. DETERMINATION OF THE RESEARCH METHODS

In this part the determinations of the research methods chosen for the research will be outlined. Firstly, the foundations for choosing quantitative research methods will be provided (§2.1.1.). Secondly, the determination of the data collection strategy will be described (§2.1.2.). Then, the intermediate results will appear in (§2.1.3.).

§2.1.1. FOUNDATIONS FOR CHOOSING QUANTITATIVE RESEARCH METHODS

In this part the foundation for choosing empirical research and quantitative research methods will be outlined. By the end of this part, the corresponding research types and methods will be chosen.

Foundation for choosing empirical research

This sub-paragraph will introduce the identification process of the appropriate research type by analyzing the most credible academic researches on mobile services adoption, by outlining and comparing the main research types, including empirical and non-empirical types, and descriptive, relational, and comparative types. By the end of the sub-paragraph it is expected to identify the research type that will deliver the credible and representative research results in the given specifics of the author's research.

The authors (Ovčjak B. et al, 2015) of the systematic literature review on factors, with regards to this research specifics "barriers", impacting the acceptance of mobile data services pointed out the predominance of the empirical researches over non-empirical ones. Another literature review (PC Lai, 2017) on technology adoption models and theories used in the context of the novelty technology revealed the same tendency as the previous literature review did. Despite such predominance mentioned by the authors, the comparison of both types and their corresponding peculiarities will be conducted to conclude the most suitable type for this research.

Non-empirical methods usually include personal observations, the opinions of the relevant to the research topic experts, conceptual theories, comprehensive literature reviews, the

reports of the companies (industry players, consulting reports) and the rest. The previous chapter created the comprehensive literature review, which included the consulting reports (Nielsen, PWC, KPMG, International Federation of the phonography industry and the rest) and the information obtained from industry experts (Ilichev, M., 2016; Golitsina, A., 2017). Ultimately, the non-empirical methods have been already used by the author to create a solid ground for the further empirical research to study the customers' adoption barriers of mobile music streaming services in Russia.

Empirical research methods (Yanow, D., and Schwartz-Shea, P. 2006) are the ones deriving knowledge from the real experience rather than from conceptual theory or belief. There are several main steps of the empirical research, such as observation, induction, deduction, testing, and evaluation. So, it is seen that the empirical research is comprehensive and thus should result in the credible representative outcomes. The academics (Ovčjak B. et al, 2015) conducted the literature review on the “mobile service adoption barriers” in the research method mentioned that the focus was on the empirical researches as on ones providing the most valid results. It is seen that the empirical models have a well-established proven by many studies methodologies, which allow to research the adoption topics in different contexts and to get the trustworthy credible results. Ultimately, the empirical models can be used in this particular research to get the credible outcomes on the research topic.

The academics (Hanafizadeh, P. et al, 2014) also categorize the adoption researches/adoption barriers researches into three following segments, such as descriptive studies, relational studies, and comparative studies. The more comprehensive explanation outlining the peculiarities of each of the type is provided below.

The descriptive studies (Rad, M. S. et al., 2017) are the ones that define the specific features and peculiarities of the technology adopters, obstacles occurring throughout the customer journey, and attracting characteristics of adoption. The studies depend on both primary and secondary evidence. However, such studies do not try to understand the cause-effects, do not try to explain what factors may prevent the adoption and thus serve as barriers. Ultimately, the descriptive study will not be valuable in pursuing the research goal of defining the list of factors preventing the adoption of music streaming services in Russia. To sum up, the type of this research will not be descriptive.

The relational studies (Rad, M. S. et al., 2017) are those examining the variables influencing the adoption and thus are useful to study the variables preventing the adoption of the digital music streaming services in Russia. Consequently, this type of the research perfectly meets the main aim of the research, which is to define the barriers preventing the diffusion of streaming music services in Russia.

The comparative studies (Rad, M. S. et al., 2017) are the ones analyzing the technology adoption by concentrating on conducting the comparisons among major variables, such as population, methods, distribution channels. This method works only if the market has been previously analyzed, so it works only if there is a lot of relevant data available. However, the topic of streaming music services in Russia is a new one, so, there is lack of data required to conduct such a research. Consequently, the comparative type of study will not be effective to answer the main research questions; thus, it is not the option chosen for the further implementation.

To sum up, this research will be empirical and relational by nature for the following reasons. On the one hand, the study will be empirical because it provides more accurate results rather than non-empirical methods only. Moreover, there are several empirically verified world class technology adoption models that can be applied into the specifics of the research to guarantee the valid representative outcomes. On the other hand, it will be relational because such type of study examines the cause and effect issues and thus will be effective to study the variables preventing the adoption of the digital music streaming services in Russia.

Foundations for choosing quantitative research methods

In this sub-paragraph the main methods of the research and their main corresponding tools will be outlined. Then, each tool will be critically analyzed for the sake of defining the extent to which it can contribute to the main aims and objectives of the research. By the end of the sub-paragraph, it is expected to choose the main research methods and their corresponding tools, which will be then used to obtain the results.

Analysis of the qualitative research methods

Qualitative research is primarily the exploratory research to get the understanding of reasons, opinions, and motivations with regards to a certain topic. Qualitative researches are often used to get into the specifics of the context by getting the opinions or thoughts from certain individuals related to the topic by following semi-structured or structured techniques. There are several widely used qualitative techniques, such as the grounded theory, case-studies, focus groups, and interview-based studies. The comprehensive description of each will be provided below to identify their suitability for the sake of research purposes.

The authors (Glasser and Strauss, 2017) suggest that classic grounded theory is often perceived as one of the best examples of the inductive approach. The technique implies building the theory through a combination of both induction and deduction approaches. The grounded theory is particularly helpful to explain and predict the behavior (Goulding, 2005). The author

(Saunders, M. et al, 2009) suggests that building a well-executed grounded theory requires the considerable experience in the corresponding topic. Consequently, if the creator of the theory lacks deep comprehensive knowledge in the topic, there is high probability that there will be no theory obtained. Furthermore, even if the theory has been created, the conceptual model suggested by the theory have high chances to be not empirically verified. Thus, this technique does not respond to the main objective of the research and consequently will not be implemented.

The author (Robson, 2002) define case study as a technique to empirically investigate the particular phenomenon within its context. The authors suggest that the case study will be very useful to get the comprehensive understanding of the context of the research and the corresponding processes (Morris and Wood, 1991). It is said that the case study strategy is most often used in explanatory and exploratory research. Moreover, case study (Saunders, M. et al, 2009) can be capable of challenging the existing theory and providing the foundation for the further researches. Since the idea of this research is to identify the barriers preventing the diffusion behavior and the nature of the study is relations, the case study techniques will not suit well.

There are two other widely-used qualitative techniques (Liamputtong, P., 2011), such as the focus group and interviews. The focus group is pretended to study the reactions of a small group of geographically diverse people, a focus group, to determine the reactions that can be expected from the whole population. In such a technique there are questions being asked to identify the participants' perception, opinions, beliefs, and attitudes towards the topic raised. There are several major issues related to this qualitative technique. The first one is the complexity of creating the representative group. The second one is the lack of anonymity, so, the results may be biased. In addition to focus groups, there is an interviewing technique that study include face-to-face interviews run on the predefined methodologies. However, one of the most obvious drawback is the time-consuming nature of the technique. Consequently, the technique demands a lot of time to conduct the number of interviews which will results in the representative results. To sum up, focus groups and the interview techniques will not suit well towards the aims, objectives, and time-limitations of this research and thus will not be included into the toolkit of the researcher.

To sum up, the most widely used qualitative techniques like case studies, grounded theory, focus groups, and face-to-face in-depth interviews will not be included into the methods chosen for the research due to their inability to address the main objectives and constraints of the research to provide representative results.

Analysis of the quantitative research methods

Quantitative research (Tashakkori, A., and Teddie, C., 2010) is primarily characterized by obtaining the data to test hypotheses related to a certain topic. The research in its methods proceeds the numerical data. However, if the data is not numerical, the quantitative research can also work in case this non-numerical data can be transformed into statistics. Such type of research is used to express numerically or to quantify the attitudes, opinions, and behaviors with the aim to generalize the obtained results to a larger population. As suggested by the classics, data collection methods in quantitative researches are more structured than those in qualitative. In addition to that, quantitative researches usually possess larger sample sizes to generalize the outcomes on a larger population. There are several well-used credible quantitative methods used in management, including experiments and survey questionnaires.

The experiment (Hakim, 2000) is the technique to study the causal links to identify whether the change in one independent variable may result in the change of another dependent variable. The experiments tend to be implemented into the methodology of the exploratory and explanatory types of research. The authors admit that experiments are frequently used in the business researches and usually conducted in the laboratories. Meanwhile laboratory conditions enhance the overall internal validity of the experiment, which is the degree to which a study minimizes the systematic error, the same conditions decrease the external validity, which is the degree to which the experiment results can be generalized on a larger sample. The author (Hakim, 2000) points out that the design conditions of the experiment frequently mean that the samples used are both small and atypical. Thus, such peculiarities of the samples lead to problems of external validity mentioned before. Consequently, to overcome such potential pitfalls of the experiment-related samples to increase the external validity it is advised to enlarge the samples and thus to increase significantly the budget of the research. Ultimately, the experiment technique is not chosen for the further research since it has high chances of providing the externally not valid results and since it does not meet the scarce budget potential of the student research.

The survey strategy (Saunders M. et al., 2009) is frequently used in the deductive, exploratory, and descriptive researches. The authors suggest that survey technique is a widely-used practice in the business and management researches. There are several advantages of using the survey questionnaires in the research. Firstly, surveys allow to collect the large amount of data from a sizeable population in a cost- and time-effective manner. The data is obtained from standardized for the research questionnaires filled by the sample participants. Secondly, the data obtained is standardized and thus the researcher can compare the data effectively without introducing validity problems. Thirdly, it is easy to interpret the quantitative data from the well-

crafted questionnaires by using the descriptive statistics, the statistics used to describe certain basic characteristics of the data set, and inferential statistics, which are the statistics making the inferences and predictions based on the sample data on what the population might think about a certain issue. Fourthly, the data obtained through the survey strategy can be used to propose the possible reasons describing the certain relationship between the variables. In addition to that, such technique is useful to create the models describing the relationship between several variables. Fifthly, the survey strategy provides the more control over the process and it also, in case of sampling usage, helps to generate the findings that are representative to the larger scope, including the scope of the population. However, it is crucially important to ensure that the sample is representative, and that the questionnaire is well-crafted. But by the time the data is collected, the research will not depend on any external unpredictable factors. Ultimately, the survey questionnaire strategy should be used as research tool since it perfectly meets the specifics and constraints, including time and budget constraints, of the research and will provide the representative to the whole population results.

The systematic literature review (Ovčjak B. et al, 2015) the factors impacting the diffusion of mobile data services has analyzed the most up-to-date researches collected from credible online databases, e.g. Elsevier, Emerald, Scopus, and the rest, and has revealed the following insights. The first is that the predominant part of the researches are quantitative and all of them without the exception used the questionnaire survey technique. Ultimately, quantitative research using questionnaires serves as the best practice within the field of adoption the mobile services.

To sum up, the quantitative type of the research with the survey questionnaire strategy should be chosen due to the following reasons. Firstly, such tools are widely used in empirical relational researches. Secondly, the streaming music services adoption barriers identified through the research will be representative to the whole generation. Thirdly, the data obtained through the research will be easy to analyze to make the recommendations based on the quantified data. Fourthly, the tools meet the time and budget constraints of this research. Fifthly, the chosen approach corresponds with the best world practices of the mobile services adoption research.

§2.1.2. Determination of the data collection strategy

This part will determine the data collection strategy. Firstly, the foundations for choosing sampling strategy will be provided. Secondly, the foundations for choosing non-probability and convenient sampling techniques will be outlined. By the end of the part, the data collection strategy will be defined.

Foundations for choosing sampling strategy

For several researches (Saunders, M. et al, 2009) it can be possible to collect the primary data from the entire population. However, the process of collecting the data from the sample, which is representative to the whole population, can also be useful. Sampling is often used in the researches with the following constraints/peculiarities.

The first reason (Saunders, M. et al, 2009) is impracticability for surveying the entire population. The second and the third reasons are dedicated to the budget and time constraints of the research. The fourth is dedicated to the time constraints associated with the data analysis. All of the constraints are valid for this thesis.

Ultimately, the sampling technique should be used to obtain the data for the research. It will allow to meet both the time and budget constraints of the research.

Foundations for choosing non-probability sampling techniques

There are two main types of sampling techniques (Saunders, M. et al, 2009), namely probability or representative sampling and non-probability or judgmental sampling. In this chapter the comparison of both methods will be conducted to identify the most appropriate type for this research.

The probability sampling (Saunders, M. et al, 2009) technique is used when the probabilities of each case being selected from the entire population is known and equal. The probability sampling is always used with survey and experimental strategies of the research. However, in this particular research there are no resources to identify the probabilities required and thus this method will not be used as a sampling strategy tool.

The non-probability sampling technique (Saunders, M. et al, 2009) is used when the probabilities of each case being taken from the entire population is unknown. The technique allows to generalize the findings obtained by using the statistical procedures. In addition, the technique is widely used in business researches, in which it is not possible to obtain the data from the whole population or the whole segment. Thus, such peculiarities perfectly meet the constraints of this research and thus should be chosen for the further chosen.

Ultimately, the non-probability sampling techniques will be chosen to execute the sampling strategy for the research since it meets the main peculiarities and constraints of the research.

Foundations for choosing convenience and snowball sampling

The business researches (Saunders, M. et al, 2009) often use the non-probability sampling techniques to collect the representative sample meeting the time and budget constraints. However, the authors indicate there are several various non-probability sampling techniques existing. So, there is the necessity to make the comparative analysis of them to choose the most suitable one for the research.

There are five main non-probability (Saunders, M. et al, 2009) sampling techniques, namely quota sampling, purposive sampling, snowball sampling, self-selection sampling, and convenience sampling. Each of them varies by the following criterion, such as likelihood of sample representativeness, recommended types of research to be applied to, relative costs, and control over sample contents.

Quota, purposive, and self-selection (Saunders, M. et al, 2009) sampling techniques will not be chosen for the research for the following reasons. Quota and purposive techniques do not meet the budget of the research and thus will not be chosen. Self-selection technique is prone to provide the biased data since the data will be collected from those who wanted to respond. However, this research and the research questions require to have the well-targeted respondents.

The convenience and snowball (Saunders, M. et al, 2009) sampling will be used for the research for the following reasons. With regards to the convenience sampling technique, it allows to use the sample of respondents that is the easiest to obtain. Consequently, it perfectly meets the budget, time, and respondent availability constraints. However, this technique is prone to bias and thus it should be tackled by possible means, which will be descried in the further parts of the research. With regards to snowball sampling technique, it is often used when it is difficult to identify certain peculiarities of the target respondents. So, this technique helps to increase the number of valid respondents by asking the target respondents to recommend a person, who can be appropriate for the research. However, there is a risk that people will recommend the individuals very much likely to them, so which may lead to homogenous sample.

Ultimately, sampling and snowball technique will be chosen for the further research for the following reasons. Firstly, the methods will be useful to obtain the appropriate sample comparatively easily and thus it will help to meet the time, budget, and resource availability constraints. Secondly, the techniques will be the adequate tools to collect the sample size of the adequate level. Thirdly, the techniques allow to reach the sample purposively and to reach hard-to-reach respondents.

Summary of §2.1.

This part has revealed the following insights on the methods of data collection.

The sampling technique should be used to obtain the data for the research. Such tool allows to meet both the time and budget constraints of the research. Specifically, non-probability sampling techniques will be chosen to execute the sampling strategy for the research. Non-probability sampling technique meet main peculiarities and constraints of the research.

Sampling and snowball technique will be chosen for the further research for the following reasons. Firstly, the methods will be useful to obtain the appropriate sample comparatively easily and thus it will help to meet the time, budget, and resource availability constraints. Secondly, the techniques will be the adequate tools to collect the sample size of the adequate level. Thirdly, the techniques allow to reach the sample purposively and to reach hard-to-reach respondents.

§2.2. DEVELOPMENT OF THE QUESTIONNAIRE AND DATA COLLECTION FRAME

In this part the process of development of the questionnaire will be outlined. Firstly, the process of designing the questionnaire will be provided (§2.2.1.). Secondly, the determination of the data analysis methods will be conducted (§2.2.2.). By the end of the sub-paragraph, the questionnaire itself will be fully developed and the data analysis tools will be chosen.

§2.2.1. DESIGNING THE QUESTIONNAIRE

The process of designing the questionnaire will be described in this section. Firstly, the foundations for using questionnaire as a tool will be described. Secondly, the process of development of the questionnaire's scales will be depicted. Thirdly, the description of data collection strategy will be outlined. By the end of the sub-paragraph, the questionnaire itself will be fully designed and described.

Foundations for using questionnaire

The previous chapters have highlighted the importance of getting the primary data for validating UTAUT2 model. They have also pointed out the importance of obtaining the right sample using the snowball and convenience sample techniques. Questionnaire perfectly suits the role of gathering the primary data by offering the respondents with standardized questions easy to be quantified later to validate or disprove the hypothesis mentioned earlier.

Development of questionnaire's scales

In this part the process of development the scales for the questionnaire used to collect the primary data will be described. The process will define the main characteristics of the questionnaire, will define the formulation process of scales based on classical UTAUT2 scales, and will outline the formulation process of the questions associated with the factors by which the model was extended. By the end of the chapter the questionnaire developed will be described.

Description of the questionnaire purposes

In this particular chapter the questionnaire for testing the extended UTAUT2 will be described. The description of the main goal of the questionnaire, of the questionnaire type, and the process of scales

The main goal of the questionnaire is to collect the non-biased data from target respondents to validate or disprove the hypothesis stated earlier. The sample size has to be large enough to generalize the findings on the entire population. The following hypothesis have to be tested by the questionnaire.

H1: Low perceived performance of music streaming services decreases the behavioral intention to accept the music streaming services.

H2: Low perceived price value of the services decreases the behavioral intention to accept the music streaming services.

H3: High perceived effort expectancy to use the services decreases the behavioral intention to accept the music streaming services.

H4: Low level of facilitating conditions decreases the behavioral intention to accept the music streaming services.

H5: Social influence can decrease the behavioral intention to accept the music streaming services.

H6: Piracy preferences could decrease the behavioral intention to accept the music streaming service.

H7: Low hedonic motivation decreases the behavioral intention to accept the music streaming services.

H8: High tangibility preferences decreases the behavioral intention to accept the music streaming services.

Each of the hypothesis will serve as a factor being tested within the questionnaire. Consequently, there is the necessity to formulate the scales of the questions to be included into the questionnaire.

Development of the scales for extended UTAUT2 questions

The author of classical UTAUT2 (Venkatesh et al., 2012) has provided the classical scales for UTAUT2 model that were empirically verified by many acceptance researches. Thus, the adjustment of the classical scales will be done in three corresponding steps.

The first step is to take the classical scales offered by the creators (Venkatesh et al., 2012) of UTAUT2 acceptance model. The classical scales from the questionnaire have been taken for the purposes of the research. The second step is to reformulate the questions changing the "mobile internet" to "music streaming services" and changing the specifics of the questions closer to the specifics of the research. The minor changes have been applied to the classical questionnaire suggested by Venkatesh. The third step is to formulate the questions for new constraints "tangibility preference" and "Piracy preference". Tangibility preference was the new constraint added to classical UTAUT2 model. The author has decided to benchmark the scales for the "tangibility preference" questions from two acceptance researches (Helkulla, 2016; Styven, 2010). In addition to that, the author by analogy formulated the scales for the "piracy preference" constraint since the latter is very much similar to "tangibility preference" one. The fourth step is to translate the questionnaire into Russian language to adjust the questionnaire closer to the target respondents. The final questionnaire is described in the appendix (Appendix 2: Development of the questionnaire).

7-points Likert scale is recommended to be used for UTAUT2 specific questions to guarantee valid responses. There are several advantages associated with 7-points Likert scale. Firstly, it is one of the most universal methods used in researches. Secondly, the scale is easy to understand. So, the respondents will more likely produce non-biased responses. Thirdly, the responses based on 7-point Likert scale are easily quantified. So, the data will be appropriate to compute statistical analysis on it. Fourthly, the scale does not require a respondent to provide the concrete opinion on a particular topic, but it allows the respondents to respond in a degree of agreement or disagreement. So, the questions will become easier for respondents, which will increase the overall quality and validity of the responses and will increase the response rate by decreasing the respondents bounce rate.

There are several filtering questions implemented into the questionnaire to identify different patterns and to reassure getting the sample of targeted respondents. One of the questions is dedicated to the fact of owning a smartphone. This question is useful to identify whether the respondent is target for this research or not. If the person does not have a smartphone, thus inevitably she is not capable of using mobile streaming music services and therefore her responses are not valid for the research. Another question is dedicated to the

frequency of listening music. The question will identify people who are not listening to the music digitally and thus are not target for the research.

To sum up, the questionnaire possesses both filtering and UTAUT2 specific questions developed in accordance with benchmark guidelines. Consequently, the questionnaire is expected to collect the sufficient sample of target respondents, which will result in valid non-biased data. The final questionnaire is described in appendix: Development of Extended UTAUT 2 Questionnaire.

§2.2.2. DESCRIPTION OF THE DATA COLLECTION FRAME

The convenient and non-probabilistic methods of sampling have been chosen for this research. The sampling will be taken from the entire population of people who consumes digital music. Since the research is intended to study the Russian customers of music streaming services and since the research budget is very limited, the digital communication channels have been chosen as the main communication channel.

Characteristics of the entire population

The sample will be taken from the entire population. The entire population has to possess the following characteristics to be valid for the research purposes.

The entire population for this research is a group of people, who listen to the music in the internet. Specifically, the entire population should represent people, who listen to the music in the internet through mobile devices. In other words, the entire population is the group of people, which owns smartphone, which possesses the internet connection on its smartphones, and which listens to the music in the internet through mobile devices. Such population possesses all the characteristics of being potential consumers of digital streaming music services. Consequently, such entire population is the appropriate choice to take a sample from it.

In the previous chapters there were justification for using convenient sampling among students provided. Thus, the sample will be taken from the segment of the entire population. The official reports (Ignatieva and Fedotov, 2018) mention that currently there are 67 million of mobile internet users in Russia. Around 25-35 million of users are 16-30 years old Russians. This group represents the predominant part of the entire population (40% of the entire population) and also both the biggest and the most digitally active segment. Consequently, the sample will be taken from the students, who represent the biggest segment of the entire population and represent one of the most important opinions impacting the adoption or non-adoption of streaming music services in Russia.

Communication channels

The following platforms have been chosen for getting the responses. Firstly, “Vkontakte” was chosen for sharing the information about the research and getting the responses from people, who listen to the music in the internet. Secondly, “Telegram” chats and channels with appropriate target audience have been chosen to gather the data. Both of the channels were used to share the information on the questionnaire and to increase the number of respondents using the snowball sampling technique. The platforms seemed to be closer to the target audience of the questionnaire.

The validity of the respondents from all the sources have been maintained by the following methods. The questionnaire had several filtering questions making the data set more representative and valid for the further analysis. Moreover, the questionnaire was fully anonymous facilitating the willingness of the respondents to provide the truly answers.

Ultimately, the self-assessed digital questionnaire spread over the internet communication channels, namely “VK” and “Telegram” is expected to collect the representative non-biased data.

§2.3. DETERMINATION THE DATA ANALYSIS METHOD

In this part the appropriate methods for analyzing the gathered data will be outlined. Firstly, there will be foundations for choosing SEM-Methods of data analysis provided. Secondly, the foundations for choosing PLS-SEM methods will be described. Thirdly, the foundations for choosing non-linear PLS-SEM methods will be pointed out. Fourthly, the foundations for choosing WARPPLS 6.0. software to analyze the data by chosen statistical methods will be depicted.

§2.3.1. FOUNDATION FOR CHOOSING SEM-METHODS

Structural equation modelling (SEM) is a quantitative technique widely used in the sphere of marketing and business research. The technique allows (Baumgartner and Homburg, 1996) to identify the cause-effect complex relationships among various constructs in the model.

SEM technique uses models to point out the relationships among the variables of the model to quantify whether the hypotheses stated are supported by data or not. SEM technique allows the researcher to mix theory with data (Fornell, 1982). Many researchers perceive the technique as one of the benchmarks, as one of the gold standards of empirical testing (Ashman and Paterson, 2015). Other researchers (Steenkamp and Baumgartner, 2000) have stated that SEM is the technique mixing the benefits of psychometric and econometric analysis.

There are many studies examining the acceptance behavior using UTAUT or UTAUT2 and proceeding with SEM techniques to analyze the data. For instance, the study (Mey-Ying Wu, 2012) examining user's behavior towards using MRT in Taiwan used UTAUT and then analyzed the data by SEM methods.

Ultimately, SEM is one of the widely-used technique to apply to business and marketing researches focusing on identification of cause-effect relationships among many different variables.

§2.3.2. FOUNDATIONS FOR CHOOSING PLS-SEM METHOD

The study (Richter et al., 2016) suggests that SEM procedure ideally fits to the researches pretending to explain a phenomenon, explain the relation of different variables, and the reasons of those relations.

The research (Richter et al., 2016) indicates that in case of having exploratory or predictive research modelling is the lucrative tool. It is indicated that there are two widely used methods, namely covariation-based structural equation modelling (CB-SEM) and partial-least-squares structural equation modelling (PLS-SEM). The comparison of two methods will be outlined to choose the most appropriate for the context of the research.

CB-SEM method (Richter et al., 2016) is used when a strong theory leads to the model development. The technique is used predominantly to understand whether the empirical data collected fits the theoretical research model. In other words, CB-SEM is often used in confirmatory researches. However, this research is an empirical relational research. So, the necessity to choose the method applying to relational research still exists.

PLS-SEM has been proven effective (Richter et al., 2016) in both predictive and exploratory researches due to the extraction of latent variable scores and due to the explanation of the large percentage of the variance in the indicator variables that are valuable for accurately predicting latent variables scores. Thus, the latter characteristic allows the PLS-SEM tool to be very efficient and effective being applied in to predictive modelling contexts. Moreover, PLS-SEM is very effective (Fornell, 1982; Wold, 1985) to explain the relationships and complex models. PLS-SEM deals with complexity well as long as the sample to be analyzed is of sufficient size. Other academics (Richter et al., 2016) states that PLS-SEM is an extremely useful tool that has been verified in its effectiveness to be applied to prediction-related and exploratory-related researches. Ultimately, the academics and practitioners strongly recommend using PLS-SEM to pursue prediction-oriented goals stated by the research.

The research (Hair et al., 2017) also indicate that PLS-SEM method has a lot of additional benefits. The method is the perfect choice if the models have more than 6 constructs

and many indicators (50+). Moreover, it is the preferred method for the researches with small sample sizes (n<100). In case of having the larger samples PLS-SEM will also be the perfect choice. Furthermore, it is the perfect tool in case of having the data distributed in non-normal way. In addition to that, it is the right tool to be applied to models with unobserved heterogeneity.

The current trends (Richter et al., 2016) in the acceptance researches indicate the growing number of acceptance researches using PLS-SEM instead of CB-SEM methods. Methodological reviews indicate that PLS-SEM is very often used in the management-related disciplines, including marketing, strategic management, information systems research. The authors indicate that one of the extra-arguments defining the wide-acceptance of PLS-SEM technique is related not only to the benefits of PLS-SEM, but also to the sufficient volume of methodological information allowing the researchers to use this method easily and correctly.

Ultimately, PLS-SEM methods will be chosen to proceed the primary data collected from the questionnaire for the following reasons. Firstly, PLS-SEM is the optimal choice to well-established models with high predictive power, such as UTAUT2. Moreover, PLS-SEM is the recommended method to be applied to business researches. Secondly, PLS-SEM is recommended to be applied to complex models. Thirdly, PLS-SEM method has sufficient volume of methodological literature, which can be used to proceed with the method both easily and effectively.

§2.3.3. FOUNDATION FOR CHOOSING THE NON-LINEAR PLS-SEM METHOD

The previous parts have identified that there are two SEM methods, such as the covariance-based one (CB-SEM) and variance-based one (PLS-SEM) one. It was also derived that PLS-SEM method is one of the widely applied to marketing and business research spheres. Despite the effectiveness of that method, the academics (Rondan-Cataluna, 2015) criticize it for supposing the linear relationship among the variables meanwhile the relationship in real life cases is also non-linear. Thus, there is the necessity to choose the appropriate form of PLS-SEM, which will neglect the previously discussed assumption laid into the methods.

The academics (Rondan-Cataluna, 2015) together with practitioners recommend using non-linear SEM-PLS to examine the relationships non-linear by nature. The academics outline that this method is more comprehensive to proceed. Despite its complexity, the academics suggest that the method guarantees unbiased and efficient estimates for the effects and relationships non-linear by nature (e.g. s- or u- curve relationships). Moreover, the study shows that non-linear model has been run for many acceptance models, including UTAUT2.

Ultimately, the non-linear PLS-SEM method will be chosen for the research for the following reasons. Firstly, the technique is applicable to UTAUT2 model. Secondly, the method effectively examines the non-linear relationships among variables. Thirdly, it improves the accurateness of the results' description. Fourthly, it improves the overall validity of the research results and thus it addresses the research question better.

§2.3.4. FOUNDATION FOR CHOOSING THE WARPPLS 6.0. SOFTWARE

Very few software can analyze non-linear effects, including U-shape relationships and S-shape relationships. WarpPLS 6.0. is the software that allows such type of analysis.

WarpPLS 6.0. has several important advantages (Rondan-Cataluna, 2015) relevant for the research. Firstly, the software estimates the model indicators fit. Secondly, the software provides the scatterplots of each of the relationships among latent variables. Thirdly, the software offers the variance inflation factor coefficients. Fourthly, there are a lot of free official educational materials to conduct the analysis both effectively and correctly.

Ultimately, WarpPLS 6.0. software will be chosen as the software to analyze the results using the non-linear PLS-SEM method for the following reasons. Firstly, it can analyze the non-linear relationship among the variables using the non-linear PLS-SEM methods. Secondly, there are a lot of official educational materials guiding the process of analysis. Thirdly, the software provides a lot of useful additional features relevant for the research.

§2.3.5. DESCRIPTION OF THE CRITERIA TO ANALYZE THE MODEL RESULTS

The comprehensive list of criteria to analyze and interpret the outputs from WARP PLS software will be outlined in this part. Firstly, the criteria and their corresponding target levels used to conduct the confirmatory factor analysis will be depicted. Secondly, the criteria used to analyze and interpret general results of the model will be outlined. Thirdly, the criteria and their corresponding target results used to accept or reject statistical hypotheses will be depicted. Ultimately, the exhaustive list of criteria to perform each of the required steps to analyze and interpret the data correctly will be described.

Criteria to conduct the Confirmatory Factor Analysis (CFA)

There are several main criteria used in the confirmatory factor analysis to assess the validity of the factor structure and reliability of the model, namely composite reliability (CR), Cronbach's alpha, Average Variance Extracted (AVE), Variance Inflation Factors (VIF), and p-values. The corresponding target level will be described for each of the criteria.

The user manual on WARP PLS exploitation (Kock, 2014) suggests that composite reliability and the Cronbach's alpha coefficients should be greater or equal to 0.7. This value will be the target level to conclude that the factor model is internally consistent and the level of reliability of latent variables is high.

The user manual on WARP PLS exploitation (Kock, 2014) suggests that Average Variance Extracted (AVE) should be equal to or greater than 0.5. This value will be the target level to conclude that the discriminant validity of the associated factor is appropriate.

The user manual on WARP PLS exploitation (Kock, 2014) suggests that Variance Inflation Factors (VIF) should be equal to or greater than 3.3., or 5.0 (more conservatively), or 10.0 (more conservatively and relaxed). This value will be the target level to conclude that there is no multicollinearity and there is no common method bias existing in the model.

The user manual on WARP PLS exploitation (Kock, 2014) suggests that p-values for the model and for the tested hypotheses should be less than or equal to 0.1 to indicate something significant (*), less than or equal to 0.05 to indicate something significant (**), and less than or equal to 0.01 to indicate something strongly significant (***). Consequently, the p-values will be used to indicate whether the hypothesis is rejected or accepted.

Criteria to interpret the general results of the model

The general results of the model tested are analyze with the support of the following indices. Among the indices are the following, namely average path coefficient (APC), average R-squared (ARS), average adjusted R-squared (AARS), average block VIF (ABVIF), average full collinearity VIF (AFVIF), Tenenhaus GOF (GOF), Sympson's paradox ratio (SPR), R-squared contribution ratio (RSCR), statistical suppression ration (SSR), and nonlinear bivariate causality direction ratio (NLBCDR).

The author (Kock, N., 2017) recommends that the p-values of APC, ARS, AARS all be equal to or lower than 0.05, which will indicate the significance at 0.05 level. However, there are no recommendations towards the values of APC, ARS, AARS. The value of average path coefficient will show hos strongly each path impacts. The value of average r-squared will describe what percent of the variation is described by the model and thus it will outline the exploratory power of the model.

The author (Kock, N., 2017) recommends the values of AVIF and AFVIF ideally to be lower than or equal to 3.3, or 5.0 (more conservatively), or 10.0 (more conservatively and relaxed). This value will be the target level to conclude that there is no multicollinearity and there is no common method bias existing in the model.

The author (Kock, N., 2017) recommends the values of GoF ideally to be larger than or equal to 0.36. The author points out three following dimensions of values for GoF. The GoF is small if the value is equal to or greater than 0.1. The GoF is medium if the value is equal to or greater than 0.25. The GoF is large if the value is equal to or greater than 0.36. So, the real values of GoF will be used to assess the exploratory power (small, medium, and large) of the model.

The author (Kock, N., 2017) recommends the values of Sympson's paradox ratio (SPR) to be larger than or equal to 0,7. The value of the SPR will be interpreted to identify the existence or lack of causality problems associated with the model, e.g. paths reversed or non-realistic.

The author (Kock, N., 2017) recommends the values of RSCR to be larger than or equal to 0.9. The value of RSCR will be used to conclude whether the model is free from negative contributions from R-square, which is one of the causality indicators.

The author (Kock, N., 2017) recommends the values of SSR to be larger than or equal to 0.7. The value of SSR will be used to conclude whether the model is free from statistical suppression, which is a possible indicator of causality problems.

The author (Kock, N., 2017) recommends the values of NLBCDR to be larger than or equal to 0.7. This indicator will be used to assess the cause-effect issues within the model by observing whether the model has the weak or even less support for reversed hypotheses.

Criteria for testing hypotheses

There are several criteria that will be used to accept or reject statistical hypotheses and interpret the results. P-values will be used to observe whether the null hypothesis is accepted or rejected. Moreover, the path coefficients and effect size indices will be used to interpret the results.

The user manual on WARP PLS exploitation (Kock, 2014) suggests that p-values for the model and for the tested hypotheses should be less than or equal to 0.1 to indicate significance (*), less than or equal to 0.05 to indicate strong significance (**), and less than or equal to 0.01 to indicate very strong significance (***). Consequently, the p-values will be used to indicate whether the hypothesis tested is rejected or accepted. If the p-value is significant, so, the null hypothesis suggesting no effect existing will be rejected in favor of H1 suggesting the existence of the effect.

The user manual on WARP PLS (Kock, 2014) does not provide any recommendations on the target values of path coefficient. However, the user manual on WARP PLS exploitation (Kock, 2014) suggests that the effects indicated by path coefficients should be used to assess

whether the effect is small, medium, or large. If the value of the effect of path coefficient is lower than 0.02, it means that the effects observed are too weak to be treated as relevant from the practical standpoint. If the value of the effect is between 0.02 and 0.15, so, the effects should be treated as moderate. If the value of the effect is between 0.15 and 0.35, so, the effect should be treated as high.

To sum up the result, the following indices will be used to conduct the analysis of the outputs of UTAUT2 model, namely composite reliability (CR), Cronbach's alpha, Average Variance Extracted (AVE), Variance Inflation Factors (VIF), p-values, average path coefficient (APC), average R-squared (ARS), average adjusted R-squared (AARS), average block VIF (ABVIF), average full collinearity VIF (AFVIF), Tenenhaus GOF (GOF), Sympson's paradox ratio (SPR), R-squared contribution ratio (RSCR), statistical suppression ration (SSR), and nonlinear bivariate causality direction ratio (NLBCDR).

Summary of Chapter 2

The quantitative type of the research with the survey questionnaire strategy should be chosen due to the following reasons. Firstly, such tools are widely used in empirical relational researches. Secondly, the streaming music services adoption barriers identified through the research will be representative to the whole generation. Thirdly, the data obtained through the research will be easy to analyze to make the recommendations based on the quantified data. Fourthly, the tools meet the time and budget constraints of this research. Fifthly, the chosen approach corresponds with the best world practices of the mobile services adoption research.

Sampling and snowball technique will be chosen for the further research for the following reasons. Firstly, the methods will be useful to obtain the appropriate sample comparatively easily and thus it will help to meet the time, budget, and resource availability constraints. Secondly, the techniques will be the adequate tools to collect the sample size of the adequate level. Thirdly, the techniques allow to reach the sample purposively and to reach hard-to-reach respondents.

The digital communication channels have been chosen to spread the questionnaire and to collect the primary data from the target respondents. There are 2 main platforms chosen for collecting the data, which is expected to be representative and non-biased due to the methodology included into the questionnaire.

The non-linear PLS-SEM method will be chosen for the research for the following reasons. Firstly, the technique is applicable to UTAUT2 model. Secondly, the method effectively examines the non-linear relationships among variables. Thirdly, it improves the accurateness of the results' description. Fourthly, it improves the overall validity of the research results and thus it addresses the research question better.

WarpPLS 6.0. software will be chosen as the software to analyze the results using the non-linear PLS-SEM method for the following reasons. Firstly, it can analyze the non-linear relationship among the variables using the non-linear PLS-SEM methods. Secondly, there are a lot of official educational materials guiding the process of analysis. Thirdly, the software provides a lot of useful additional features relevant for the research.

The following indices will be used to conduct the analysis of the outputs of UTAUT2 model, namely composite reliability (CR), Cronbach's alpha, Average Variance Extracted (AVE), Variance Inflation Factors (VIF), p-values, average path coefficient (APC), average R-squared (ARS), average adjusted R-squared (AARS), average block VIF (ABVIF), average full collinearity VIF (AFVIF), Tenenhaus GOF (GOF), Sympson's paradox ratio (SPR), R-squared contribution ratio (RSCR), statistical suppression ration (SSR), and nonlinear bivariate causality direction ratio (NLBCDR).

CHAPTER 3: DATA ANALYSIS AND DEVELOPMENT OF THE MANAGERIAL RECOMMENDATIONS

The dataset of 244 responses has been collected. The data was collected in April 2018 through online questionnaire. The targeted respondents were Russian citizens and thus the geography of the sample was intended to be limited by Russian borders. However, a part of respondents, who were Russians by origin, permanently lived outside Russia by the time of data collection and therefore were deleted out of the sample.

§3.1. SAMPLE AND DESCRIPTIVE STATISTICS

In this part the sample obtained will be described in order to check whether its peculiarities correspond with those expected. Then, the descriptive statistics will be provided to make a quick overview of the main insights on people's perception of streaming music services in Russia.

§3.1.1. SAMPLE OBTAINED

The initial sample of 244 responses has been collected through online communication channels, such as social network "Vkontakte" and messenger "Telegram". There is the necessity to describe how the initial sample was analyzed and what was the size of the final sample.

The questionnaire had several filtering questions to obtain the appropriate for the research purposes sample. There were three main filters included into the questionnaire. The first tested whether the respondent owned the smartphone or not. The second one tested whether a person had mobile internet or not. The third one was dedicated to identifying whether the person listened to the music in the internet or not. The fourth one asked for the city of permanent residence. After applying all the filters to the data set obtained, the final data set resulted in 230 responses of target Russians, who had the mobile phone, had mobile internet, listened to the music in the internet, and who permanently lived in one of Russian cities.

The sample size obtained meets the sufficiency size requirements suggested by various approaches. Firstly, the rule of thumb indicates that the minimum recommended sample size must be ten times higher than the maximum number of paths referred to a latent variable in the model. Since there are nine paths directed to behavioral intention, then the minimum sufficient sample size should be equal to or greater than 90 (230>90). Secondly, the inverse square root method (Appendix: Explore statistical power and sample size requirements) set on the default setting of WARP PLS recommends having the minimum required sample size equal to or greater than 160 (230>160). Thirdly, the gamma-exponential method (Appendix: Explore statistical power and sample size requirements) set on the default setting of WARP PLS recommends

having minimum required sample size equal to or greater than 146 (230>146). The sample size obtained meets and exceeds the requirements posed by various approaches and thus is expected to provide valid insights.

Ultimately, the further analysis will rely on filtered data consisting of 230 responses. Such volume of sample meets the requirements of three approaches, e.g. the rule of thumb, the inverse square root method, and the gamma-exponential method.

§3.1.2. DESCRIPTIVE STATISTICS

This part will quantitatively describe the features and peculiarities of the sample collected. This part does not aim to make statistical inferences about the sample and its representativeness of the entire population, which will be done in (§3.2.). The part is expected to provide a quick overview (Appendix: Descriptive Statistics) of the main insights on people's perception of streaming music services in Russia.

All of the respondents (Appendix: Descriptive Statistics) in the sample obtained indicated that they had a smartphone. Moreover, the predominant part (~81% of respondents) listens to the music in the internet at once a day or even more frequently. It is important to mention that more than a half of the respondents (~55%) listens to the music in the internet several times a day. There were only 2 people who did not listen to the music in the internet at all.

The predominant part of the sample (96%) indicated (Appendix: Descriptive Statistics) that it had already tried to use some of the streaming music services. However, the massive part of the sample (~40%) has never subscribed to music streaming services. Ultimately, these charts show that many students have tried the services but have not switched to paid subscriptions due to several unidentified reasons.

With regards to frequency of using streaming music services, there are several interesting findings. Firstly, the fifth of respondents (~20%) do not use streaming music services at all (Appendix: Descriptive Statistics). Secondly, the fourth of respondents (~25%) use streaming music services once or several times a week. Thirdly, more than a half (~60%) use streaming music services from once a day to several times in an hour. Consequently, there are three main groups of consumers segmented by the frequency of usage: non-consumers, consumers, and frequent consumers.

There are several interesting observations derived from the responses related to the "performance expectancy" factor (Appendix: Descriptive statistics of main constructs). Generally, the predominant part of people positively perceives (5.8/7.0) key value propositions of streaming music services. More specifically there are following observations. Firstly, most respondents (~94%) think that music streaming services make the access to the music easier. The

most popular choice taken by slightly a half of the respondents (~40%) is “7”. This preference indicates that people perceive that services heavily simplifies the access to the music. Secondly, the major part of respondents (~90%) perceives that music streaming services allow to listen to the music easily. Thirdly, the largest part (~93%) of the respondents perceives that music streaming services offer a wide range of music compositions, which is one of the most important value drivers of streaming music services. Fourthly, the biggest part (~97%) perceives that music streaming services simplifies the process of searching for the music. Fifthly, the large part of respondents (~85%) perceives that music streaming services offer good recommendation system. However, at least 18% of respondents took neutral choice, which is “4”, and 16% of respondents took the negative choice, which is in range from 1 to 3. Ultimately, around 34% of respondents do not perceive the recommendation system offered by streaming music services as valuable. Sixthly, the major part of respondents (~95%) perceives that music streaming services allow listening to the music without downloading the concrete musical tracks. To sum up the result, the descriptive statistics lay the foundation to presume that low perceived performance expectancy is not the barrier preventing people from using streaming music services in Russia.

There are several interesting observations derived from the responses related to the “effort expectancy” factor (Appendix: Descriptive statistics of main constructs). Generally, people tend to believe that it is easy for them (6.2/7.0) to use or to learn how to use streaming music services. More specifically, there are following observations. Firstly, the predominant part of the respondents (~94%) understands how to use streaming music services. Secondly, the largest part of respondents (~92%) believes that it is easy to use streaming music services. Thirdly, the large proportion of respondents (~98%) believes that it is easy to learn how to use streaming music services. To sum up the result, the descriptive statistics allows to assume that people perceive the effort expectancy volume as low and thus it will not be the barrier for acceptance of streaming music services.

There are several interesting observations derived from the responses related to the “social influence” factor (Appendix: Descriptive statistics of main constructs). Generally, people took a neutral opinion stating that they do not know (3.7/7.0) how society impacts their decision on using streaming music services. The responses given to all the statements are practically identical. Thus, the summary of all four questions will be provided in one sentence. The predominant part of the respondents (~45%) has taken a neutral choice, which is “4”, and do not tend perceive the social impact as something strong or weak. The half of the rest (25%) supports the opinion that important people do not impact the decision on whether to use streaming music services or not. The rest (25%) supports the opinion that important people do impact the decision

on whether to use streaming music services or not. To sum up the result, social influence may become a factor preventing people from accepting streaming music services in Russia.

There are several interesting observations derived from the responses related to the "facilitating conditions" factor (Appendix: Descriptive statistics of main constructs). Generally, the predominant part of the respondents believes that it has all required resources and knowledge to use streaming music services effectively (6.1/7.0). More specifically, there are following observations. Firstly, the predominant part of the respondents (~96%) thinks that they possess all resources to use music streaming services. Secondly, the largest part of the respondents (~98%) thinks that they possess the appropriate mobile internet speed and traffic required for using streaming music services effectively. Thirdly, the largest proportion of the respondents (~97%) perceives itself as the one possessing all required knowledge to use streaming music services. Fourthly, the major part of respondents (~95%) thinks that streaming music services are compatible with other information systems the respondents use. Fifthly, the predominant proportion (~97%) believes that they can get the support in case of facing the issues of using streaming music services. To sum up the result, descriptive statistics allows to assume that facilitating conditions factor does not serve as a barrier preventing the acceptance of the streaming music services.

There are several interesting observations derived from the responses related to the "hedonic motivation" factor (Appendix: Descriptive statistics of main constructs). Generally, respondents tend to believe that using streaming music service is fun, enjoyable, and entertaining (5.0/7.0). Some respondents (around 10%) do not agree with those statements. To sum up the results, the descriptive statistics allows to presume that low perceived hedonic motivation associated with using streaming music services will not be the barrier preventing the accepting of streaming music services.

There are several interesting observations derived from the responses related to the "price value" factor (Appendix: Descriptive statistics of main constructs). Generally, most of respondents tend to perceive the price value of streaming music services as fair one (5.1/7.0). More specifically, there are following observations. Firstly, the largest part of respondents (~60%) perceive the price for streaming music services as fair one. Among all respondents (~20%) do have neutral opinion with regards to price offered. Moreover, there is a segment (~15%) who does not perceive the price as fair one. Secondly, many respondents (~60%) perceive that value for money offered is good. Conversely, the segment (around 20%) negatively perceives the value for money offering and another segment (~20%) neutrally perceive the value for money offering. Thirdly, there is a part of respondents (11%) and another part of them (16%) who perceives the current value for money ratio negatively or neutrally. To sum up the result, the

price value perception does not introduce one widely believed opinion on whether the price value is appropriate or not. Consequently, such observations allow to assume that price value factor may serve as a barrier preventing the acceptance of streaming music services in Russia.

There are several interesting observations derived from the responses related to the "habit" factor (Appendix: Descriptive statistics of main constructs). There are different opinions on whether respondents use streaming music services habitually or not. The average value for such factor is 4.7/7.0. More specifically, there are following observations. The solid part of respondents (~20%) does not believe that behavior of using streaming music services has become habitual for them. Moreover, there is a big part of neutral respondents (~12%) with regards to the question proposed. However, the predominant segment (~65%) has the positive opinion on that question. Secondly, the fourth of respondents (25%) does not agree that it get used to using streaming music services. There is a big segment (13%) having a neutral opinion towards the issue raised. Thirdly, more than a half (~55%) of respondents do not agree that they need to use streaming music services. To sum up the result, the opinions in this factor are polarized and it is possible to identify different segments based on habitual factor. Moreover, there is a big segment that did not get used to using streaming music services. Therefore, the habit factor may become one of the barriers preventing the acceptance of streaming music services in Russia.

There are several interesting observations derived from the responses related to the "tangibility preference" factor (Appendix: Descriptive statistics of main constructs). The majority of respondents (~92-95%) disagreed with the opinion that music should be stored at physical format, that it is important for them personally to store music in a physical format, and that they prefer to store music on physical formats (2.0/7.0). Ultimately, the description statistics allows to assume that preference to have or store music on tangible sources will not be a barrier preventing the acceptance of streaming music services in Russia.

There are several interesting observations derived from the responses related to the "piracy preference" factor (Appendix: Descriptive statistics of main constructs). Generally, people have a habit of getting illegal free music from the internet (5.6/7.0). More specifically, there are following observations. Firstly, the majority of respondents (~82%) have a habit of downloading music from the internet for free. Secondly, the predominant part of respondents agreed with the habit of listening to the music in the internet for free. Thirdly, the largest proportion of people surveyed (~83%) has become accustomed not to pay for the music consumed in the internet. To sum up the result, strong habit of consuming music in the internet for free can prevent acceptance of streaming music services.

There are several interesting observations derived from the responses related to the "behavioral intention" factor (Appendix: Descriptive statistics of main constructs). The predominant part of the respondents indicated (5.8/7.0) that they are going use streaming music services in the future (~92%), in the daily life (~90%), and often (~89%). To sum up the result, the descriptive statistics allows to assume that behavioral intention, which is high among respondents, will unlikely serve as a barrier preventing the acceptance of streaming music services.

There are several interesting observations derived from the responses related to the social demography characteristics. Tre sample consists predominantly of ladies (62%). The largest part of respondents (~95%) is from 20 to 26 years old. All of the respondents are Russians. The biggest part of them (~95%) live in Moscow and Saint Petersburg. Moreover, the major part of respondents is pursuing the higher education degree (54%) or working (43%). There are 4 main income levels, namely 50k+/month (36%), 30-50k/month (27%), 20-30k/month (20%), and less thank 20k/month (17%).

§3.2. ANALYSIS OF THE MODEL

In this part the analysis of the model and its outputs will be conducted in the following sequence. Firstly, the confirmatory factor analysis will be conducted to verify the factor structure used within the model. Secondly, the model fit indices will be outlined to understand the statistical peculiarities of the model. Thirdly, the structural model will be depicted to visualize the significant paths evaluated. By the end of the chapter, all statistical iterations will be performed and described.

§3.2.1. CONFIRMATORY FACTOR ANALYSIS

In this part the confirmatory factor analysis will be conducted to verify the factor structure of a set of observed variables. CFA will help to test the hypothesis that a relationship among variables observed and their corresponding latent constructs exists. For purposes of conducting CFA the following set of indicators will be used. The first one is Cronbach's alpha, which is aimed to measure the internal consistency and should be equal to or more than 0.7. The second one is composite reliability, which is intended to measure the reliability of latent variable. The target value associated with the indicator should be more or equal to 0.7 to prove reliability. The third factor will be the average variance extracted measuring the discriminant validity of the associated factor.

The table (Appendix 5: Confirmatory factor analysis) shows that all the factors possess the value of Cronbach's alpha coefficient more or equal to 0.7. Consequently, such values prove the internal consistency of the factors observed.

The composite reliability indicator is more or equal to 0.7 in all cases except for FC. For FC the value of CR is 0.685, which is slightly less than required. It is seen that FC factor has valid results from the prospective of Cronbach's alpha but cannot be proven from CR prospective. Consequently, there are certain risks that the factor is not reliable enough. It will be mentioned in the limitations of the research.

The recommendation for VIF are the following. The values of VIF should be less or equal to 5 (Hair et al., 1987; 2009; Kline, 1998; Kock, 2014a). However, the rule of thumb says that VIF should be less or equal to 3.3. The majority of the values are less than 3.3. Only 2 values HB (3.597) and BI (3.345) are slightly less than 3.3. but still less than recommended 5.0.

The recommendation for AVE are the following. For convergent validity assessment purposes, the square roots of AVE values should be higher than or equal to 0.5. It is seen from the appendix (Appendix 6: Correlation among indicators), that the value of square root of AVE in all cases is higher than 0.5. Consequently, the convergent validity has been proved from this prospective.

The convergent validity is always measured by analyzing the loadings value of all items of corresponding factors. To check whether the model has appropriate convergent validity it is recommended to have the value of loadings higher than or equal to 0.5 and p-values associated with loadings lower than 0.05. The table (Appendix 7: Factor loadings) shows that there are several items of the factors that obtained loadings less than 0.5. Among them are the following ones, namely PE4, PE6, PE7, FC2, FC3, FC6. Even though all the items were based on empirically verified researches, some of them were proven inappropriate. Consequently, the items with loadings less than 0.5 will not be included into the corresponding factors and thus will not be analyzed further. The items and factor loadings are presented in the appendix (Appendix 8: Factor Structure and items' loadings).

Construct	Item	Items	Loadings	Cronbach's alpha	Composite reliability
Performance Expectancy (PE)	PE1	Music streaming services simplifies the access to music tracks	(0.737)	0.836	0.834
	PE2	Music streaming services are convinient for listening to the music	(0.936)		
	PE3	Music streaming services allow to listen to the music easily	(0.844)		
	PE5	Music streaming services simplifies the process of searching for the music	(0.629)		
Effort Expectancy (EE)	EE1	Learning to operate music streaming services apps is easy for me	(0.832)	0.850	0.853
	EE2	My interaction with music streaming services apps is clear and understandable	(1.000)		
	EE3	I can easily learn how to use streaming music services	(0.563)		
Social Influence (PU)	SI1	People who are important to me think that I should use music streaming services	(0.772)	0.942	0.940
	SI2	People who influence my behaviour think that I should use music streaming services	(0.978)		
	SI3	People whose opinion that I value prefer that I use music streaming services	(0.817)		
	SI4	People in the internet whose opinion that I value prefer that I use music streaming services	(0.988)		
Facilitating Conditions (FC)	FC1	I have the resources necessary to use music streaming services	(0.697)	0.717	0.703
	FC4	I have the knowledge necessary to use music streaming services	(0.685)		
	FC5	Music streaming services are compatible with other systems I use	(0.614)		
Hedonic Motivation (HM)	HM1	Using music streaming services is fun	(0.713)	0.864	0.863
	HM2	Using music streaming services is enjoyable	(0.989)		
	HM3	Using music streaming services is very entertaining	(0.748)		
Price Value (PV)	PV1	Music streaming services are reasonable priced	(0.881)	0.919	0.919
	PV2	Music streaming services provide a good value for money	(0.922)		
	PV3	At the current price, music streaming services provide a good value	(0.865)		
Habit (HB)	Hb1	The use of music streaming services has become a habit for me	(0.967)	0.950	0.953
	Hb2	I am addicted to using music streaming services	(0.984)		
	Hb3	I must use music streaming services	(0.746)		
	Hb4	Music streaming services has become natural to me	(0.944)		
Tangibility Preference (TP)	TP1	For me it is important to have music in physical format.	(0.895)	0.925	0.925
	TP2	Music should be stored in physical formats	(0.869)		
	TP3	I prefer to store music as digital files.	(0.925)		
Piracy Preference (OP)	PP1	I get used to download music for free	(0.892)	0.881	0.880
	PP2	I get used to listenting to the music in the internet for free	(0.851)		
	PP3	I get used to not paying for music I listen to on the Internet	(0.781)		
Behavioral Intention (BI)	BI1	I intend to continue use music streaming services in the future	(0.922)	0.971	0.971
	BI2	I will always try to use music streaming services in my daily life	(0.969)		
	BI3	I plan to continue to use music streaming services frequently	(0.983)		

Figure 1: Items and factor loadings

To sum up the results, the confirmatory factor analysis has confirmed and verified the factor structure used within the model. The model has been proven as one with good validity and reliability and thus it is expected to provide credible research results.

§3.2.2. MODEL FIT INDICES

The general results of the model tested will be described in a way provided by WARPPLS 6.0. The following indices (Appendix 9: Model fit and model's general results) of the model will be outlined and compared with target values. Among the indices are the following, namely average path coefficient (APC), average R-squared (ARS), average adjusted R-squared (AARS), average block VIF (ABVIF), average full collinearity VIF (AFVIF),

Tenenhaus GOF (GOF), Sympson's paradox ratio (SPR), R-squared contribution ratio (RSCR), statistical suppression ration (SSR), and nonlinear bivariate causality direction ratio (NLBCDR).

The author (Kock, N., 2017) recommends that the p-values of APC, ARS, AARS all be equal to or lower than 0.05, which will indicate the significance at 0.05 level. Corresponding p-values of APC is 0.019, ARS is <0.001, AARS is <0.001. All values are less than 0.05. Consequently, they are all significant at 0.05 level.

The author (Kock, N., 2017) recommends the values of AVIF and AFVIF ideally to be lower that or equal to 3.3. The model indicates that AVIF index equals to 1.839 and AFVIF equals to 1.880. Both of them are less than 3,3 and thus meet the criterion proposed.

The author (Kock, N., 2017) recommends the values of GoF ideally to be larger than or equal to 0.36. The model indicates that GOF equals to 0,640, which is higher than proposed 0,36. This value meets the statistical requirement proposed.

The author (Kock, N., 2017) recommends the values of Sympson's paradox to be larger than or equal to 0,7. The model indicates that the corresponding value equals 0,731. Consequently, the value meets the requirement.

The author (Kock, N., 2017) recommends the values of RSCR to be larger than or equal to 0.9. The real value of RSCR obtained is 0.927, which is larger than 0.9. Consequently, the value meets the requirement.

The author (Kock, N., 2017) recommends the values of SSR to be larger than or equal to 0.7. The real value of SSR obtained is 1.000, which is larger than 0.7. Consequently, the value meets the requirement.

The author (Kock, N., 2017) recommends the values of NLBCDR to be larger than or equal to 0.7. The real value of RSCR obtained is 0.962, which is larger than 0.7. Consequently, the value meets the requirement.

To sum up the result, all the indices without the exception meet the requirements of the model. Many of indices have the values associated ideal but not just acceptable values.

§3.2.3. STRUCTURAL MODEL

In this part the final model will be validated after testing all statistical hypotheses (Appendix 10: Statistical hypotheses). Firstly, the analysis of the significance of latent variables paths will be conducted. Then, the same analysis will be performed for moderating variables. By the end of the part the final model and significant relationships will be depicted and visualized.

Latent variables

The hypothesized paths have been evaluated. The following hypothesis, such as H1, H3, H6, H7.1., H7.2., and H9 have been supported. Conversely, the following hypothesis, such as H2, H4, H5, H8, and H10 have been rejected due to non-significant p-values (Appendix 11: Significance of the latent variables' paths).

H1: Low perceived performance of music streaming services decreases the behavioral intention to accept the music streaming services. Performance expectancy (PE) was hypothesized to have a negative influence towards the behavioral intention to use streaming music services. As illustrated in appendix 11, the effect of PE was significant (p=0.057), path coefficient equaled to (0.1), and the effect size for path coefficient (0.057>0,02) was considered as moderate.

H2: High perceived effort expectancy to use the services decreases the behavioral intention to accept the music streaming services. Effort expectancy (EE) was hypothesized to have a negative influence towards the behavioral intention to use streaming music services. As illustrated in appendix 11, the effect of EE was insignificant (p=0.361), path coefficient (0.023), and the effect size for path coefficient (0.011<0,02) was considered as too weak.

H3: Social influence can decrease the behavioral intention to accept the music streaming services. Social Influence (SI) was hypothesized to have a negative influence towards the behavioral intention to use streaming music services. As illustrated in appendix 11, the effect of SI was significant (p=0.04), path coefficient (0.111), and the effect size for path coefficient (0.051>0,02) was considered as moderate.

H4.1.: Low level of facilitating conditions decreases the behavioral intention to accept the music streaming services. Facilitating conditions (FC) was hypothesized to have a negative influence towards the behavioral intention to use streaming music services. As illustrated in appendix 11, the effect of FC was insignificant (p=0.149), path coefficient (0.066), and the effect size for path coefficient (0.0027>0,02) was considered as weak-moderate.

H4.2.: Low level of facilitating conditions decreases the usage of streaming music services. Facilitating conditions (FC) was hypothesized to have a negative influence towards the usage of streaming music services. As illustrated in appendix 11, the effect of FC was insignificant (p=0.434), path coefficient (-0.011), and the effect size for path coefficient (0.003<0,02) was considered as too weak.

H5: Low hedonic motivation decreases the behavioral intention to accept the music streaming services. Hedonic motivation (HM) was hypothesized to have a negative influence towards the behavioral intention to use streaming music services. As illustrated in appendix 11,

the effect of HM was insignificant (p=0.269), path coefficient (0.039), and the effect size for path coefficient (0.022>0,02) was considered as weak-moderate.

H6: Low perceived price value of the services decreases the behavioral intention to accept the music streaming services. Price value (PV) was hypothesized to have a negative influence towards the behavioral intention to use streaming music services. As illustrated in appendix 11, the effect of PV was significant (p=0.025), path coefficient (0.124), and the effect size for path coefficient (0.071>0,02) was considered as moderate.

H7.1: Low level of habit decreases the behavioral intention to accept streaming music services. Habit (HB) was hypothesized to have a negative influence towards the behavioral intention to use streaming music services. As illustrated in appendix 11, the effect of HB was significant (p < 0,001), path coefficient (0.555), and the effect size for path coefficient (0.0428>0,35) was considered as very strong.

H7.2: Low level of habit decreases the usage of streaming music services. Habit (HB) was hypothesized to have a negative influence towards the usage of streaming music services. As illustrated in appendix 11, the effect of HB was significant (p < 0,001), path coefficient (0.557), and the effect size for path coefficient (0.0406>0,35) was considered as very strong.

H8: High tangibility preferences decreases the behavioral intention to accept the music streaming services. Tangibility preferences (TP) was hypothesized to have a negative influence towards the usage of streaming music services. As illustrated in appendix 11, the effect of TP was insignificant (p=0.107), path coefficient (-0.079), and the effect size for path coefficient (0.019<0,02) was considered as too weak.

H9: Piracy preferences could decrease the behavioral intention to accept the music streaming service. Piracy preferences (PP) was hypothesized to have a negative influence towards the behavioral intention to use streaming music services. As illustrated in appendix 11, the effect of PP was significant (p=0.098), path coefficient (0.082), and the effect size for path coefficient (0.025>0.02) was considered as weak-moderate.

H10: Low level of behavioral intention decreases the usage of streaming music services. Behavioral Intention (BI) was hypothesized to have a negative influence towards the usage of streaming music services. As illustrated in appendix 11, the effect of BI was significant (p < 0,001), path coefficient (0.302), and the effect size for path coefficient (0.205>0.15) was considered as strong.

Moderating variables

The hypothesized paths have been evaluated for moderating variables. The following hypothesis, such as H11, H14, H18, and H20 have been supported. Conversely, the following

hypothesis, such as H12, H13, H15, H16, H17, H18, H19, H21, H22, H23, and H24 have been rejected due to non-significant p-values (Appendix 12: Significance of the moderating variables' paths).

H11: Age will moderate the effect of facilitating conditions on behavioral intention. As illustrated in appendix 12, the effect of Age was significant (p=0.072), path coefficient (-0.092), and the effect size for path coefficient (0.024>0.02) was considered as weak-moderate.

H14: Age will moderate the effect of habit on behavioral intention. As illustrated in appendix 12, the effect of Age was significant (p=0.093), path coefficient (0.084), and the effect size for path coefficient (0.019<0.02) was considered as too weak.

H17: Gender will moderate the effect of price value on behavioral intention. As illustrated in appendix 12, the effect of Gender was significant (p=0.096), path coefficient (-0.075), and the effect size for path coefficient (0.023>0.02) was considered as weak-moderate.

H20: Gender will moderate the effect of habit on use. As illustrated in appendix 12, the effect of Gender was significant (p=0.021), path coefficient (-0.129), and the effect size for path coefficient (0.036>0.02) was considered as weak-moderate.

Structural Model Visualized

In the previous parts all the hypotheses have been tested and all main statistical indices of the model have been reviewed. All the indices without the exception have meet the requirements of the model. Many of indices have the values associated ideal but not just acceptable values. The model has been justified to have the appropriate and reliable factor structure. The model is depicted below (Figure 17). The model with all values of paths is depicted in the appendix (Appendix 14: Structural model).

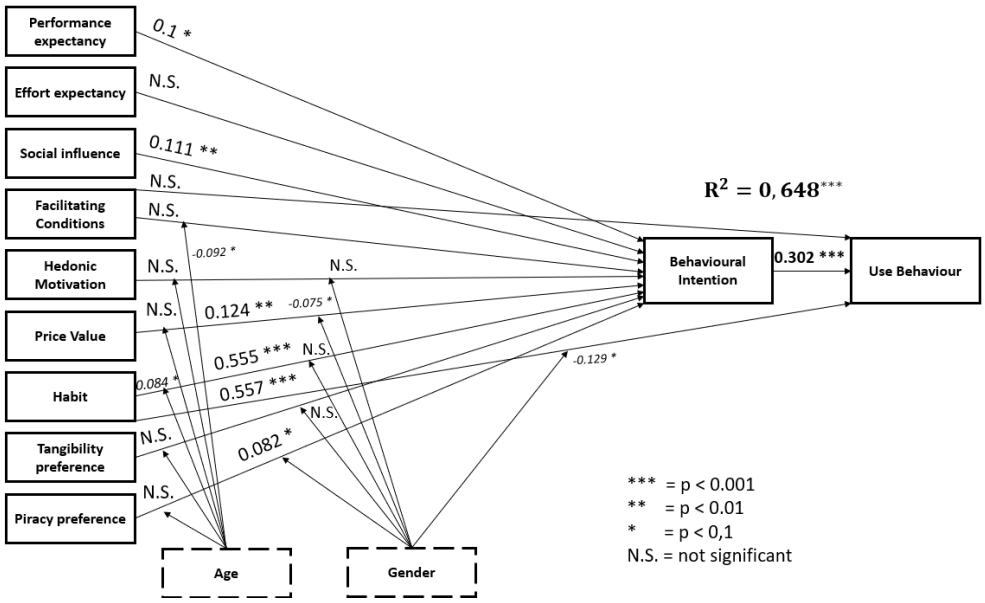

Figure 27: Structural model of the research

The following paths have been justified as significant, namely the impact of performance expectancy, social influence, price value, habit, and piracy preference on behavioral intention. Moreover, the habit and behavioral intention relationship with use behavior have been confirmed as significant. There are several moderating significant paths identified, namely age on facilitating condition and habit on behavioral intention, and gender on hedonic motivation-BI and gender on habit-use.

§3.3. DISCUSSION OF THE RESULTS

In this part the discussion of the obtained results will be conducted in the following sequence of steps. Firstly, the interpretation of the statistical insights obtained will be provided. Secondly, the managerial implications based on the obtained insights will depicted. Thirdly, the value generated by this research to academic society will be defined. Fourthly, the limitations associated with the research will be pointed out.

§3.3.1. INTERPRETATION OF THE RESULTS

In this part the interpretation of the statistical results obtained will be provided. Firstly, the interpretation of the model fit indices will be provided. Secondly, the interpretation of the hypotheses' indices will be provided, and corresponding interpretations will be outlined. Ultimately, by the end of the interpretation of the model validity will be provided and the list of hypotheses accepted will be outlined.

Interpretation of the general results

This part will be dedicated to the results interpretation. Firstly, the main indices of the model will be explained and then the interpretations of the hypotheses related indices will be provided.

The confirmatory factor analysis has confirmed that the factor structure of the model is reliable and thus the model is expected to provide valid and reliable results. Each of the construct has the appropriate value of Cronbach's alpha (>0.7) which proves the internal consistency of the factors within the factor structure observed. Moreover, all of the factors except FC have been proven also from the prospect of composite reliability values (>0.7). Facilitating conditions factor has obtained a slightly less score than required (0.685 < 0.7). In the next steps of the research it will be pointed out that facilitating conditions is not the significant factor, so, such score will not introduce any additional bias. Moreover, it is important to mention that facilitating conditions factor consisted of five adjusted to the research classical sub-factors, some of which obtained a very low loading value. Consequently, if the components with low loadings will be

removed from the factor, the composite reliability value will be increased. Since the factor is not significant (will be proven later) the sub-factors will not be deleted from facilitating conditions factor.

The average path coefficient (APC) equals to 0.112 with p-value equals to $p < 0.019$. This means (Kock, N., 2017) that 1 standard deviation in value of any predictor variable (one of the model factors, such as PP, PE, SI etc.) leads to 0.112 standard deviation of behavioral intention variable. P-value obtained equals to 0.119, which is less than 0.05 and thus significant (**).

The value of average R-squared equals to 0.648, which means that the model explains 64,8% of variance of consumers intention to accept or non-accept streaming music service in Russia. The value ($0.5<0.648<0.7$) means (Kock, N., 2017) that there is a moderate-strong upward correlation. The corresponding p-value equals to $p < 0.001$, which means that the model and thus its outputs are significant and reliable. So, the results can be used as reliable one for scientific or practical purposes. Therefore, such index indicates that the model has high explanatory power and the latter describes 64,8% of behavior variation of consumer behavior of accepting or non-accepting streaming music services in Russia.

The value of Average adjusted R-squared (AARS)=0.630, $P<0.001$. This is the adjusted ARS for the number of predictors in the model extended UTAUT2. The value ($0.5<0.630<0.7$) (Kock, N., 2017) means that there is a moderate-strong upward correlation. The corresponding p-value equals to $p < 0.001$, which means that the model and thus its outputs are significant and reliable. Thus, the results can be used as reliable one for scientific or practical purposes. Therefore, such index indicates that the model has high explanatory power and the latter describes 63% of behavior variation of consumer behavior of accepting or non-accepting streaming music services in Russia.

The values of Average block VIF (AVIF)=1.839 and Average full collinearity VIF (AFVIF)=1.880 are ideal (ideal values are less than 3.3.). This means (Kock, N., 2017) that latent variables do not overlap in meaning with each other and thus the model comprises of relevant factors. Consequently, the model has good construct validity and thus it can be used to explore issues like acceptance or non-acceptance of streaming music services or lookalike matters. Moreover, the model has high overall predictive and explanatory quality.

The value of Tenenhaus GoF (GoF)=0.640 (0,64>0,36 large). This value means (Kock, N., 2017) that the model has very high level of explanatory power, which is the ability of the model to explain effectively the issues intended to be explained. Consequently, the model is good at explaining the behavior of consumers accepting or non-accepting streaming music services in Russia.

The value of SPR is 0.731 (0,731 > 0,7 acceptable). Since Simpson's paradox is a possible indicator of the causality problem (Kock, N., 2017), which is the situation of having the path reversed or not realistic, the value of SPR indicates that the model has at least the predominant part of its paths (73,1%) being free of Simpson's paradox. Therefore, the model is reliable since it does not have causality problems. Thus, the model can be applied into the contexts of investigating the acceptance behavior of consumers adopting or not adopting streaming music services.

The value of RSCR is 0,927 (0,927 > 0,9 acceptable). Like SPR, RSCR always indicates lack of causality problems in the paths examined (Kock, N., 2017). Consequently, this indicator has confirmed that the model is free of reversed on non-realistic paths and thus it is reliable. Thus, the model can be applied into the contexts of investigating the acceptance behavior of consumers adopting or not adopting streaming music services.

The value of statistical suppression ratio (SSR) is 1.000 (1.000 >= 0.7 acceptable). Like SPR and RSCR, SSR is a possible indicator of causality problems (Kock, N., 2017). The results of this index are ideal and thus they indicate the free of Simpson's paradox. Thus, the model can be applied into the contexts of investigating the acceptance behavior of consumers adopting or not adopting streaming music services.

The value of nonlinear bivariate causality direction ratio (NLBCDR) is 0.962 (0.962 >= 0.7). This indicator always shows the lack of causality problems among the paths. The value of 0.962 shows that at least 96,2% of paths observed in the model have a weak or even less support for reversed hypothesis to be true. Consequently, such model is good for determining cause-effect issues.

The short interpretation of the general results is that the model has high explanatory power and good factor structure intended to reliably verify cause-effect issues in the context of streaming music services environment in Russia.

Interpretation of the hypotheses

The research has justified that habit, price value, social influence, performance expectancy, and piracy preference are significant determinants of behavioral intention to adopt or to prevent the acceptance of streaming music services in Russia. Consequently, all these significant determinants may serve as barriers preventing the acceptance of the streaming music services in Russia.

Habit factor is the most influential driver influencing the behavioral intention. This construct impacts heavily both the behavioral intention and usage behavior towards streaming music services. There are three very strong items (ones with loading value > 0,9) explaining the

predominant part of the Habit factor variation. In addition, the descriptive statistics has shown that approximately 40% of respondents do not agree with the fact that they have a strong habit of using streaming music services. Ultimately, habit factor and its corresponding items (HB1, HB2, HB4) are the concrete barriers preventing the adoption of streaming music services in Russia. Consequently, the companies have to address their actions to nurture a habit of using streaming music services regularly and to make such behavior natural to consumers, e.g. students and young people.

Price value is the second most influential determinant of the behavioral intention. All three items the factor is comprised of have strong correlation coefficients with the factor itself. Consequently, streaming music services pricing aspect is one of the most potential drivers preventing the acceptance. The descriptive statistics indicates that the large part of respondents (~40%) perceives music streaming services' value for money offerings as neutral or negative ones. Thus, inevitably, the neutral-negative perception of value for money becomes one of the significant barriers. The companies must address either price or value perception to get an increase in behavioral intention to accept streaming music services.

Social influence is the third strongest driver impacting the behavioral intention to accept or not streaming music services in Russia. There are four main items explaining the predominant part of the social influence variation. The descriptive statistics indicates that in average the predominant part of the respondents (~70%) indicated that they think either neutrally or even disagree with the opinion that valuable, trust-worthy or other important for them people think the respondents need to use streaming music services. Consequently, lack of positive social influence towards using streaming music services serves as a barrier preventing people from accepting the technology. Thus, the companies have to address these issues directly to increase the behavioral intention to accept the streaming music services in Russia.

Performance expectancy is the fourth strongest driver impacting the behavioral intention to accept or not streaming music services in Russia. There are four main items explaining the predominant part of the social influence variation. The descriptive statistics indicates that the predominant part of the respondents (~85%) have taken positive answers towards the performance features offered indicating that the respondents are aware of the value offered. Since consumers are aware of the value proposition and perceives the valuable features of streaming music services positively, hence, the performance expectancy is not the barrier preventing the acceptance of streaming music services in Russia.

Piracy preference is the fifth strongest driver impacting the behavioral intention to accept or not streaming music services in Russia. There are three main items explaining the predominant part of the social influence variation. The descriptive statistics indicates that people

get used to downloading, listening to the music for free, and not paying for listening in the internet. Consequently, the strong habit of getting the digital music for free prevents people from accepting the streaming music services in Russia. Therefore, piracy preference stands as one of the barriers preventing the acceptance.

To sum up the result, there are five main significant drivers impacting the acceptance of streaming music services in Russia, namely habit, price value, social influence, performance expectancy, and piracy preference. There are four main barriers preventing the adoption of streaming music services in Russia, namely habit, price value, social influence, and piracy preference.

§3.3.2. MANAGERIAL IMPLICATIONS

The research has identified four main acceptance barriers preventing the adoption of streaming music services in Russia, namely habit, price value, social influence, and piracy preference. In this part the recommendations for streaming music services providers in Russia will be provided to overcome the barriers identified in the research.

The previous parts made obvious the following statements. Firstly, in the beginning of the research it was taken for granted (based on the public sources) that there a lot of people who do not switch to streaming music services and who even do not try them. However, it was revealed that the predominant part of respondents has tried to use streaming music services but has not switched to the paid services. So, the main problem is dedicated to not switching towards paid streaming services. Therefore, the companies have to create the comprehensive strategy to address the concrete problem of not switching towards paid streaming music services.

One of the steps recommended for companies is to manage the perception of customers towards value for money ration associated with the services. Since the value for money consists of two components, e.g. perceived value and price charged, the companies have two options. On the one hand, the companies may consider revising their price policy to find the optimal price to charge the streaming music services in Russia. On the other hand, the companies may consider increasing the perception of value associated with streaming music services in Russia. The marketers, for instance, may conduct the marketing campaigns to increase the brand equity of streaming music services providers, to increase the awareness of certain brand characteristics, and to foster the awareness on certain peculiarities of the service making the whole offering more valuable to customers.

Another implication for companies is associated with addressing directly the social influence factor. For instance, the companies may run digital marketing campaigns to foster the awareness among potential customers of their relatives or peers using paid steaming music

services. It will address directly the significant items identified, which revealed that lack of positive opinions from trust-worthy and respectful peers serves as a block preventing the acceptance. Ultimately, such a campaign will be helpful to switch the neutral impact of the social factor to the positive one. It will be valuable tool to increase the intention to buy paid subscription to streaming music services. Finally, it may also lead to building a habit of using streaming music services.

Another implication is dedicated to the piracy constraint. Streaming music service providers must diminish the habit of consuming piracy content. The companies have to run marketing campaigns to increase the awareness of the benefits provided the streaming music services ecosystem in comparison to those offered by pirate providers. In addition to that, the streaming music service providers may also influence the ethical considerations with regards to using the services.

Furthermore, in accordance with the research results, prohibitive measures on piracy is not effective and leads only to continuation of the usage of pirate services and content. Consequently, it is important to focus on "soft" courses of actions, e.g. promo-campaigns showing the advantages of legal content and corresponding services and disadvantages of the pirate content and corresponding services.

Since such campaigns target deeply rooted behavioral patterns and attributes of a formed mindset of Russian consumers, the changes will not occur immediately. However, well-tailored marketing and PR campaigns can accelerate the speed of obtaining the first results. Moreover, the more comprehensive research on the prerequisites of the pirate behavior can serve as a ground for further academic studies.

All these implications should be conducted to nurture the habit of using streaming music services and then to switch such loyal consumers to the paid subscription. The campaigns should be strategically targeted to leverage the effect from all the insights revealed.

§3.3.3. ACADEMIC VALUE OF THE RESEARCH

The conducted research and the obtained results are also valuable for the academic society for the following reasons.

Firstly, the research provides the concrete answer on what barriers prevent the acceptance of streaming music services in Russia. Thus, it generates the new knowledge, which is the list of factors and the unique acceptance model, and it makes them publicly available.

Secondly, the research lays the foundation for the subsequent studies on this topic. The research has developed and verified the unique acceptance model, and it has comprehensively

described the methodology used. Thus, the research has provided the model and methodology, which can be further adjusted and extended, to perform similar researches.

Thirdly, the research describes and illustrates the opinion of the biggest segment of consumers of digital music services in Russia. Moreover, the research provides the opinion connected with concrete time without studying the evolution of preferences and opinions dynamically. Consequently, the research lays the foundations for the more comprehensive researches covering all segments of consumers and exploring how the impact of different barriers is evolving dynamically throughout the time.

Ultimately, the research has generated new relevant knowledge and has created the foundation for the further research on the topic of acceptance of streaming music services.

§3.3.4. LIMITATIONS OF THE RESEARCH

This research is associated with three main limitations described further.

The first limitation is that the sample collected for the study consists primarily of students and young people (20-25 years old) from Saint Petersburg and Moscow, which might introduce the bias while being represented to the entire population. Even though the sample is a good representation of only the segment of the entire population, it is not representative of the whole population. So, the results should not be generalized to the country level.

The second limitation is that the sample consisted primarily of people with prior experience who have already used streaming music services, which might be a reason why FC factor has not been treated statistically as internally valid.

Third of all, the sample size was sufficient but was limited by 230 respondents, so it can lead to situation that in certain extent the results do not reflect the true effect of a larger population. It is specifically recommended to test significant paths with weak-moderate path effects on larger samples.

Ultimately, the limitations should be taken into consideration by the further studies relying on the obtained insights.

CONCLUSIONS

There were two main research questions stated by the research. The following answers have been obtained after conducting the comprehensive review of existing practical and academic sources on the topic of acceptance, after developing the appropriate comprehensive empirical model tailored to the specifics of Russian digital music industry, and after performing the comprehensive advanced statistical analysis to get the validated insights.

1) What are adoption barriers that prevent customers in digital music industry from switching to streaming music services?

There are four main barriers preventing the adoption of streaming music services in Russia, namely habit, price value, social influence, and piracy preference. Each of the barriers has different determinants describing the concrete things preventing people from acceptance behavior. With regards to habit factor, the research indicates that such type of behavior has not become habitual or natural to people, people have not got addicted to use streaming music services in Russia. With regards to price value, people do not perceive value for money ration associated with streaming music services as high or neutral; they tend to perceive that in a more negative way. With regards to social influence, the research indicates that there is lack of people who are important to potential consumers and who believe that they should use streaming music services. Consequently, there is lack of influencers thinking and transmitting the idea that it is important to use streaming music services and that people should use streaming music services. With regards to piracy preference, people have a strong habit of downloading music for free and of listening music in the internet for free. Consequently, people have a strong habit of listening to the music in the internet and a strong habit of not paying for that.

2) What are adoption barriers that prevent customers in digital music industry from switching to paid streaming music services?

There are two main barriers preventing the adoption of paid streaming music services in Russia, namely perceived price value proportion of streaming music services in Russia and strong preference to pirate behavior. With regards to piracy preference, people have a strong habit of downloading music for free and of listening music in the internet for free. Moreover, people have a negative perception of the price value proportion associated with streaming music services.

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APPENDIX 1: CONCEPTUAL UTAUT2 EXTENDED

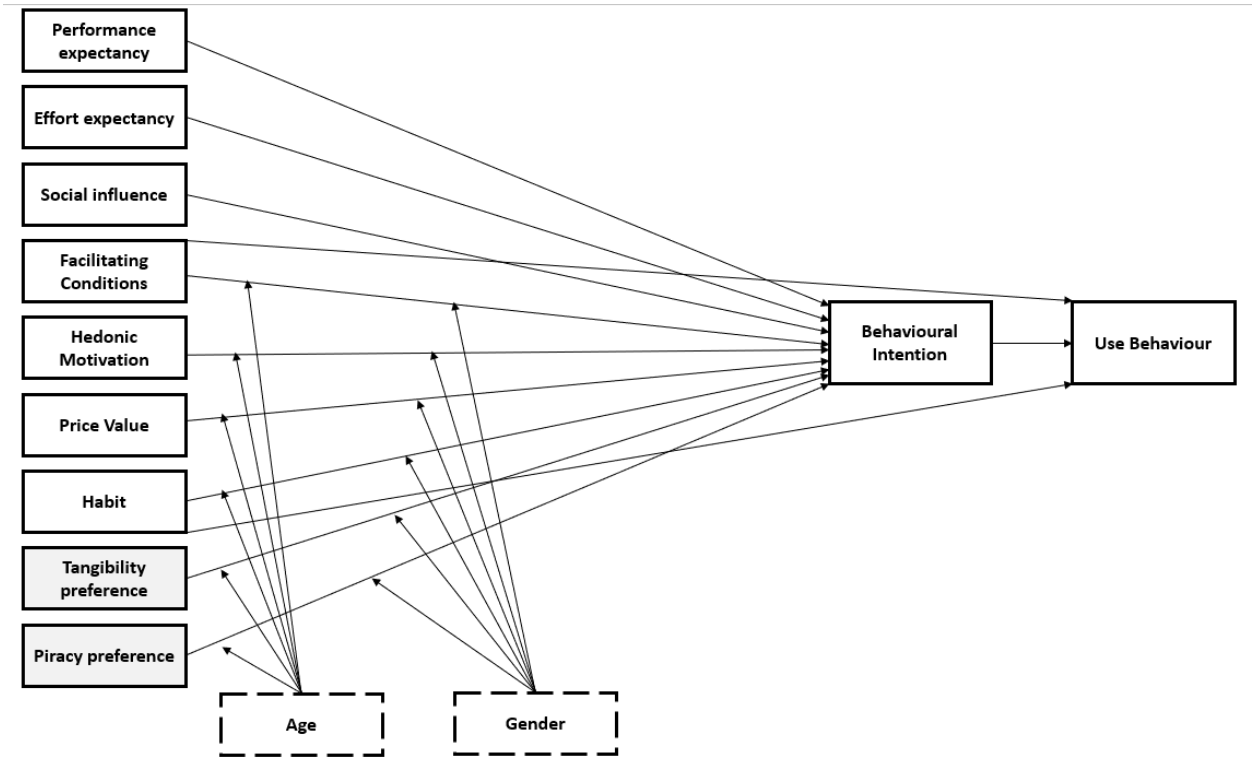

Figure 1: Conceptual UTAUT2 Extended

APPENDIX 2: DEVELOPMENT OF THE QUESTIONNAIRE

Вводный экран в исследование.

Уважаемый респондент,

Приглашаем Вас поучаствовать в исследовании, изучающем восприятие музыкальных стриминговых сервисов. Обращаем Ваше внимание, что опрос является полностью анонимным.

Музыкальные стриминговые сервисы (Apple Music, Yandex Music, Google Play Music, Deezer, Spotify и др.) предоставляют клиентам доступ ко всем музыкальным трекам из библиотеки сервиса. Большинство стриминговых сервисов (Apple Music, Yandex Music и др.) предлагают доступ к музыке при покупке ежемесячной подписки.

Ваш ответ важен для нас вне зависимости от того, пользовались ли Вы ранее услугами музыкальных стриминговых сервисов или нет.

Большое спасибо за Ваше участие!

(Здесь вставлена картинка apple music для облегчения восприятия респондентов)

1) **У вас есть смартфон?** Да/нет (фильтрующий вопрос для того, чтобы удалить из опросов тех, кто не может пользоваться стриминговыми сервисами из-за отсутствия смартфона)
2) **Как часто вы слушаете музыку в интернете?**

Frequency of use (Adapted from Rosen et al., 2013)		
Never	Never	Никогда
Once a month	Once a month	Раз в месяц
Several times a month	Several times a month	Несколько раз в неделю
Once a week	Once a week	Раз в день
Several times a week	Several times a week	Несколько раз в день
Once a day	Once a day	Раз в час
Several times a day	Several times a day	Несколько раз в час

3) **Вы когда-нибудь пробовали использовать музыкальные стриминговые сервисы (Apple Music, Yandex Music, Google Play Music, Deezer, Spotify и др.)?** да/нет

   (Здесь можно будет выделить два сегмента: кто переключился на стриминг музыки, а кто не переключился. Появится возможность использовать этот вопрос для того, чтобы ответить на research questions, в частности, почему люди не переключаются, или почему переключаются, но не платят).

4) **Вы когда-нибудь оформляли платную подписку на музыкальные стриминговые сервисами? (Apple Music, Yandex Music, Google Play Music, Deezer, Spotify и др.)?** да/нет

   (Здесь можно будет выделить два сегмента: кто переключился на стриминг музыки, а кто не переключился. Смогу использовать этот вопрос для того, чтобы отвечать на research questions, в частности, почему люди не переключаются, или почему переключаются, но не платят).

5) **Как часто Вы пользуетесь музыкальными стриминговыми сервисами?** *(варианты будут предложены на русском языке)*

(Этот вопрос позволит дополнительно проверить, кто пользуется сервисами, а кто нет. Более того, он позволит сегментировать пользователей по частоте использования, чтобы выявить разные тенденции в ходе дальнейшего исследования).

Frequency of use (Adapted from Rosen et al., 2013)		
Never	Never	Никогда
Once a month	Once a month	Раз в месяц
Several times a month	Several times a month	Несколько раз в месяц
Once a week	Once a week	Раз в неделю
Several times a week	Several times a week	Несколько раз в неделю
Once a day	Once a day	Раз в день
Several times a day	Several times a day	Несколько раз в день

Далее мы просим Вас ответить на вопросы о Вашем потенциальном опыте использования музыкальных стриминговых сервисов. Пожалуйста, отметьте, насколько Вы согласны с каждым из перечисленных утверждений (1 – полностью не согласны, 7 – полностью согласны)

(Вопросы будут показаны на русском языке, будет использована семибалльная шкала Лайкерта (1 – полностью не согласен, 7 – полностью согласен)

Original scale	**Adjusted scale**	**Adjusted scale translated**
Performance Expectancy (Venkatesh et al., 2012)		
PE2. Using mobile Internet helps me accomplish things more quickly.	Music streaming services help me to achieve my tasks in a better way	Музыкальные стриминговые сервисы облегчают доступ к музыке
Performance Expectancy (Tak, 2017)		
PE4: Shopping is useful tool for online shopping	Music streaming services are useful to listen to the music	Музыкальные стриминговые сервисы удобны для прослушивания музыки
PE5: Shopping app enables me to do shopping easily	Music streaming services enable to listen to the music easily	Музыкальные стриминговые сервисы позволяют слушать музыку легко
PE4: Shopping is useful tool for online shopping	Music streaming services provides me with a wider range of music available to me	Музыкальные стриминговые сервисы предлагают широкий выбор музыкальных треков
PE4: Shopping is useful tool for online shopping	Music streaming services enables me to search for the music faster in one place	Музыкальные стриминговые сервисы позволяют мне облегчить процесс поиска музыки
PE4: Shopping is useful	Music streaming	Музыкальные

tool for online shopping	services offer me with tailored recommendations that suit me well	стриминговые сервисы имеют хорошую систему рекомендаций треков/плейлистов
PE4: Shopping is useful tool for online shopping	Music streaming services allow me to listen to the music without the need to download	Музыкальные стриминговые сервисы позволяют слушать музыку без необходимости скачивания треков на смартфон
Original scale	**Adjusted scale**	**Adjusted scale translated**
Effort Expectancy (Venkatesh et al., 2012)		
EE3. My interaction with mobile Internet is clear and understandable.	My interaction with music streaming services apps is clear and understandable	Мне понятно, как использовать музыкальные стриминговые сервисы
EE2. I find mobile Internet easy to use.	I find music streaming services apps easy to use	Мне легко использовать музыкальные стриминговые сервисы
EE1. Learning how to use mobile Internet is easy for me.	Learning to operate music streaming services apps is easy for me	Я могу легко научиться процессу использования музыкальных стриминговых сервисов
Original scale	**Adjusted scale**	**Adjusted scale translated**
Social influence (Venkatesh et al., 2012)		
SI1. People who are important to me think that I should use mobile Internet.	People who are important to me think that I should use music streaming services	Люди, которые важны для меня, считают, что мне надо использовать музыкальные стриминговые сервисы
SI2. People who influence my behavior think that I should use mobile internet.	People who influence my behaviour think that I should use music streaming services	Люди, влияющие на мое поведение, считают, что мне надо использовать музыкальные стриминговые сервисы
SI3. People whose opinions that I value prefer that I use mobile Internet.	People whose opinion that I value prefer that I use music streaming services	Люди, которым я доверяю, считают, что мне надо использовать музыкальные стриминговые сервисы
SI3. People whose opinions that I value prefer that I use mobile Internet.	People in the internet whose opinion that I value prefer that I use music streaming services	Люди, чьему мнению в интернете я доверяю, считают, что мне надо использовать музыкальные стриминговые сервисы

Original scale	Adjusted scale	Adjusted scale translated
Facilitating conditions (Venkatesh et al., 2012)		
FC1. I have the resources necessary to use mobile Internet.	I have the resources necessary to use music streaming services	У меня есть все необходимые средства для использования музыкальных стриминговых сервисов
FC2. I have the knowledge necessary to use mobile Internet.	I have the knowledge necessary to use music streaming services	У меня есть все необходимые знания для использования музыкальных стриминговых сервисов
FC3. Mobile Internet is compatible with other technologies I use.	Music streaming services are compatible with other systems I use	Музыкальные стриминговые сервисы совместимы с другими технологиями, которые я использую
FC4. I can get help from others when I have difficulties using mobile Internet.	A specific person (or group) is available for assistance with music streaming services	Я смогу получить помощь от других людей в случае возникновения проблем с использованием музыкальных стриминговых сервисов
Original scale	**Adjusted scale**	**Adjusted scale translated**
*Hedonic motivation (*Venkatesh et al., 2012)		
HM1. Using mobile Internet is fun.	Using music streaming services is fun	Пользоваться музыкальными стриминговыми сервисами весело
HM2. Using mobile Internet is enjoyable.	Using music streaming services is enjoyable	Пользоваться музыкальными стриминговыми сервисами приятно
HM3. Using mobile Internet is very entertaining.	Using music streaming services is very entertaining	Пользоваться музыкальными стриминговыми сервисами очень увлекательно
Original scale	**Adjusted scale**	**Adjusted scale translated**
*Price Value (*Venkatesh et al., 2012)		
PV1. Mobile Internet is reasonably priced.	Music streaming services are reasonable priced	Цена подписки на музыкальные стриминговые сервисы является обоснованной
PV2. Mobile Internet is a good value for the money.	Music streaming services provide a good value for money	Музыкальные стриминговые сервисы имеют хорошее соотношение цены и качества
PV3. At the current price, mobile Internet provides a	At the current price, music streaming services provide a good value	По нынешним ценам музыкальные стриминговые сервисы предлагают

good value.		хорошее качество
Original scale	**Adjusted scale**	**Adjusted scale translated**
Habit (Venkatesh et al., 2012)		
HT1. The use of mobile Internet has become a habit for me.	The use of music streaming services has become a habit for me	Использование музыкальных стриминговых сервисов стало для меня привычным
HT2. I am addicted to using mobile Internet.	I am addicted to using music streaming services	Я привык использовать музыкальные стриминговые сервисы
HT3. I must use mobile Internet.	I must use music streaming services	Мне необходимо использовать музыкальные стриминговые сервисы
HT4. Using mobile Internet has become natural to me (dropped)	Music streaming services has become natural to me	Использование музыкальных стриминговых сервисов для меня привычно
Original scale	**Adjusted scale**	**Adjusted scale translated**
Tangibility preference (Styvén, 2010)		
TP1: For me it is important to have music in physical format.	For me it is important to have music in physical format.	Для меня важно хранить музыку на физическом носителе
TP2: I feel that physical formats are more "real" and genuine.	Music should be stored in physical formats	Музыка должна храниться на физическом носителе (CD, DVD, пластинки и т.п.)
TP3: I prefer to store music as digital files.	I prefer to store music as digital files.	Я предпочитаю хранить музыку на физических носителях (CD, DVD, пластинки и т.п.)
Original scale	**Adjusted scale**	**Adjusted scale translated**
Piracy preference (Styvén, 2010)		
PP1: For me it is important to have music in physical format.	PP1: For me it is important to have music in physical format.	Я привык скачивать музыку бесплатно
PP2: I feel that physical formats are more "real" and genuine.	PP2: I feel that physical formats are more "real" and genuine.	Я привык слушать музыку бесплатно
PP3: I prefer to store music as digital files.	PP3: I prefer to store music as digital files.	Я привык не платить за музыку в интернете

Original scale	**Adjusted scale**	**Adjusted scale translated**
Behavioral Intention (Venkatesh et al., 2012)		
BI1. I intend to continue using mobile Internet in the future.	I intend to continue use music streaming services in the future	Я планирую использовать музыкальные стриминговые сервисы в будущем

BI2. I will always try to use mobile Internet in my daily life.	I will always try to use music streaming services in my daily life	Я буду использовать музыкальные стриминговые сервисы в моей повседневной жизни
BI3. I plan to continue to use mobile Internet frequently.	I plan to continue to use music streaming services frequently	Я планирую часто использовать музыкальные стриминговые сервисы

39) **Пол:** м/ж (демографические вопросы)

40) Возраст: (демографические вопросы)

меньше 18 лет

18-25 лет

26-35 лет

36-46 лет

больше 46 лет

41) Город Вашего постоянного проживания: *ответ вводится респондентом самостоятельно*

42) В данный момент Вы: (демографические вопросы)

Получаете среднее образование

Получаете Высшее образование

Работаете

Безработный

На пенсии

43) Оцените свой ежемесячный доход: (демографические вопросы)

до 20 000 рублей

от 20 000 до 30 000 рублей

от 30 000 до 50 000 рублей

более 50 000 рублей

APPENDIX 3: SAMPLE SIZE REQUIREMENTS

Minimum absolute significant path coefficient in model (range: 0.01 to 0.99)
0.197
Significance level used (range: 0.001 to 0.5)
0.050
Power level required (range: 0.5 to .99)
0.800
Notes: leave cell empty for default value; re-calculation occurs each time any of the values above changes; heuristic rule: sample sizes cannot be lower than 4; may be slow for very small minimum path coefficients, very high power levels, and very low significance levels.

Figure 3: WARP PLS menu for sample size settings

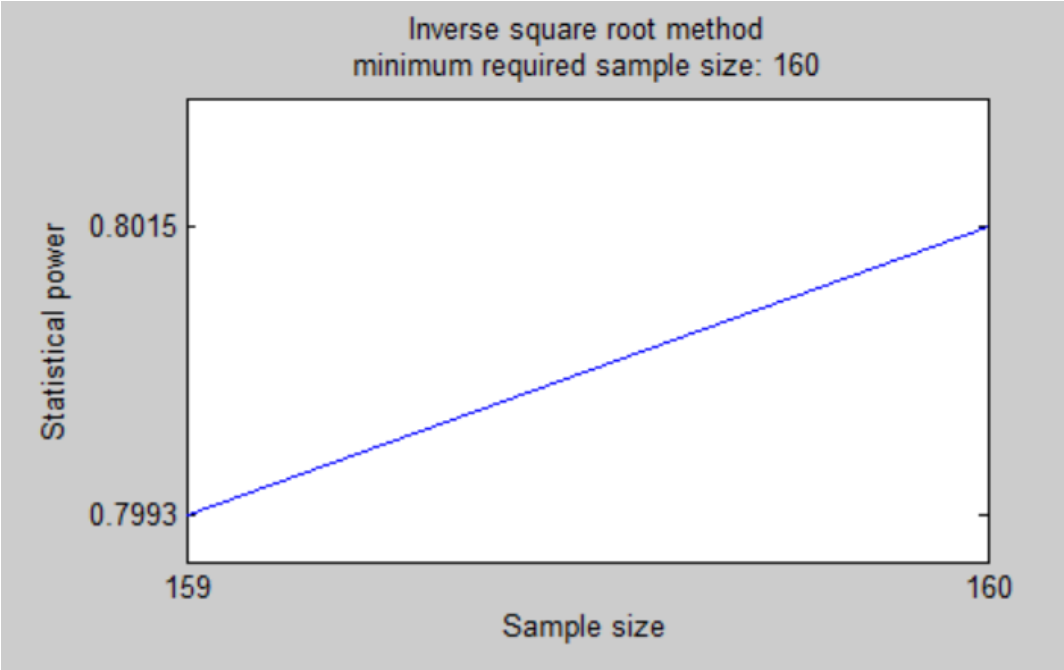

Figure 4: Inverse square root method requirements for Sample Size

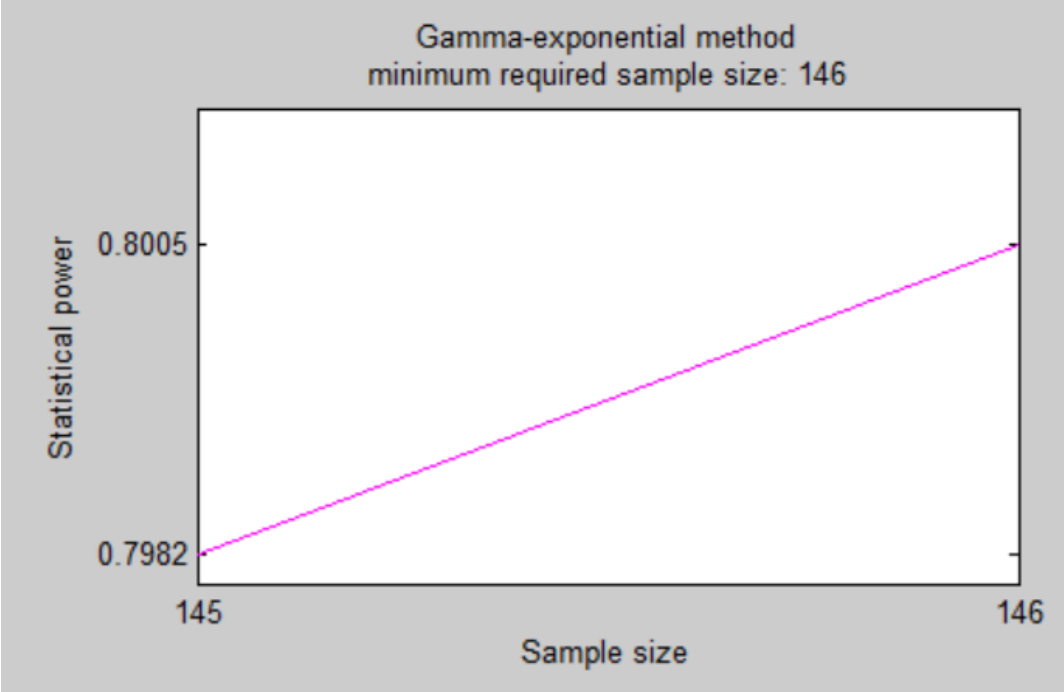

Figure 5: Gamma-exponential method requirements for Sample Size

APPENDIX 4: DESCRIPTIVE STATISTICS

Construct	Mean
Performance Expectancy (PE)	5,8
Effort Expectancy (EE)	6,2
Social Influence (SI)	3,7
Facilitating Conditions (FC)	6,1
Hedonic Motivation (HM)	5,0
Price Value (PV)	5,1
Habit (HB)	4,7
Tangibility preference (TP)	2,0
Piracy preference (PP)	5,6
Behavioral Intention (BI)	5,8
1 - not important	
4 - neutral position	
7 - very important	

Figure 6: Average values for all constructs

Component	Number of respondents (n=230)	%
Do you have a smartphone?		
Yes	230	100,00%
No	0	0,00%
Frequency of listening to the music in the internet		
Never (1)	2	0,87%
Once a week (2)	8	3,48%
Several times a week (3)	47	20,43%
Once a day (4)	29	12,61%
Several times a day (5)	128	55,65%
Once in an hour (6)	9	3,91%
Several times in an hour (7)	20	8,70%
I have already tried using streaming music services		
Yes	221	96,09%
No	9	3,91%
I have already paid for the subscription of streaming music services		
Yes	140	60,87%
No	90	39,13%
Frequency of listening to the music through streaming music services		
Never (1)	47	20,43%
Once a week (2)	31	13,48%
Several times a week (3)	28	12,17%
Once a day (4)	18	7,83%
Several times a day (5)	97	42,17%
Once an hour (6)	6	2,61%
Several times an hour (7)	16	6,96%

Figure 7: Descriptive statistics I

Component	Number of respondents (n=230)	%
Gender		
Male	96	41,74%
Female	153	66,52%
Age		0,00%
20	11	4,78%
21	19	8,26%
22	47	20,43%
23	92	40,00%
24	51	22,17%
25+	10	4,35%
City of permanent residence		
Saint Petersburg	150	65,22%
Moscow	65	28,26%
Other Russian Cities	15	6,52%
Current activity status		
Full-time worker	99	43,04%
Student	125	54,35%
Unemployed	0	
Intermediate school participant	0	
Retired	0	
Average monthly income		
50K RUR +	83	36,09%
30-50k RUR	61	26,52%
20-30k RUR	48	20,87%
< 20k RUR	38	16,52%

Figure 8: Socio-demographic characteristics of the sample

APPENDIX 5: CONFIRMATORY FACTOR ANALYSIS

	Composite reliability	Cronbach's alpha	Avg. Variance extracted	Full.collin. VIF
PE	0.834	0.836	0.441	2.180
EE	0.853	0.850	0.670	1.994
SI	0.940	0.942	0.799	1.450
FC	0.685	0.717	0.297	1.508
HM	0.863	0.864	0.682	2.123
PV	0.919	0.919	0.792	1.980
HB	0.953	0.950	0.838	3.597
TP	0.925	0.925	0.804	1.275
PP	0.880	0.881	0.710	1.467
BI	0.971	0.971	0.918	3.345

Figure 9: Confirmatory factor analysis

APPENDIX 6: CORRELATION AMONG INDICATORS

Correlations among l.vs. with sq. rts. of AVEs

	PE	EE	SI	FC	HM	PV	HB	TP	PP	BI
PE	(0.664)	0.504	0.334	0.380	0.544	0.529	0.527	-0.264	-0.262	0.558
EE	0.504	(0.819)	0.247	0.413	0.378	0.356	0.527	-0.133	-0.250	0.479
SI	0.334	0.247	(0.894)	0.111	0.406	0.286	0.389	-0.008	-0.148	0.410
FC	0.380	0.413	0.111	(0.545)	0.296	0.336	0.337	-0.068	-0.172	0.401
HM	0.544	0.378	0.406	0.296	(0.826)	0.453	0.533	-0.202	-0.280	0.546
PV	0.529	0.356	0.286	0.336	0.453	(0.890)	0.542	-0.065	-0.401	0.563
HB	0.527	0.527	0.389	0.337	0.533	0.542	(0.915)	-0.106	-0.385	0.762
TP	-0.264	-0.133	-0.008	-0.068	-0.202	-0.065	-0.106	(0.897)	0.081	-0.226
PP	-0.262	-0.250	-0.148	-0.172	-0.280	-0.401	-0.385	0.081	(0.842)	-0.297
BI	0.558	0.479	0.410	0.401	0.546	0.563	0.762	-0.226	-0.297	(0.958)

Note: Square roots of average variances extracted (AVEs) shown on diagonal.

Figure 10: Correlation among indicators

APPENDIX 7: FACTOR LOADINGS

Factor\Loadings	ii1	ii2	ii3	ii4	ii5	ii6	ii7
PE	(0.737)	(0.936)	(0.844)	*(0.480)*	(0.629)	*(0.371)*	*(0.440)*
P-values of Peii	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
EE	(0.832)	(1.000)	(0.563)				
P-values of EE	<0.001	<0.001	<0.001				
SI	(0.772)	(0.978)	(0.817)	(0.988)			
P-values of SI	<0.001	<0.001	<0.001	<0.001			
FC	(0.697)	(0.473)	(0.463)	(0.685)	(0.614)	*(0.100)*	
P-values of FC	<0.001	<0.001	<0.001	<0.001	<0.001	0.057	
HM	(0.713)	(0.989)	(0.748)				
P-values of HM	<0.001	<0.001	<0.001				
PV	(0.881)	(0.922)	(0.865)				
P-values of PV	<0.001	<0.001	<0.001				
HB	(0.967)	(0.984)	(0.746)	(0.944)			
P-values of HB	<0.001	<0.001	<0.001	<0.001			
TP	(0.895)	(0.869)	(0.925)				
P-values of TP	<0.001	<0.001	<0.001				
PP	(0.892)	(0.851)	(0.781)				
P-values of PP	<0.001	<0.001	<0.001				
BI	(0.922)	(0.969)	(0.983)				
P-values of BI	<0.001	<0.001	<0.001				

Figure 11: Factor loadings

APPENDIX 8: FACTOR STRUCTURE AND ITEMS' LOADINGS

Construct	Code	Items	Loadings	Cronbach's alpha	Composite reliability
Performance Expectancy (PE)	PE1	Music streaming services simplifies the access to music tracks	(0.737)	0.836	0.834
	PE2	Music streaming services are convinient for listening to the music	(0.936)		
	PE3	Music streaming services allow to listen to the music easily	(0.844)		
	PE5	Music streaming services simplifies the process of searching for the music	(0.629)		
Effort Expectancy (EE)	EE1	Learning to operate music streaming services apps is easy for me	(0.832)	0.850	0.853
	EE2	My interaction with music streaming services apps is clear and understandable	(1.000)		
	EE3	I can easily learn how to use streaming music services	(0.563)		
Social Influence (SI)	SI1	People who are important to me think that I should use music streaming services	(0.772)	0.942	0.940
	SI2	People who influence my behaviour think that I should use music streaming services	(0.978)		
	SI3	People whose opinion that I value prefer that I use music streaming services	(0.817)		
	SI4	People in the internet whose opinion that I value prefer that I use music streaming services	(0.988)		
Facilitating Conditions (FC)	FC1	I have the resources necessary to use music streaming services	(0.697)	0.717	0.685
	FC4	I have the knowledge necessary to use music streaming services	(0.685)		
	FC5	Music streaming services are compatible with other systems I use	(0.614)		
Hedonic Motivation (HM)	HM1	Using music streaming services is fun	(0.713)	0.864	0.863
	HM2	Using music streaming services is enjoyable	(0.989)		
	HM3	Using music streaming services is very entertaining	(0.748)		
Price Value (PV)	PV1	Music streaming services are reasonable priced	(0.881)	0.919	0.919
	PV2	Music streaming services provide a good value for money	(0.922)		
	PV3	At the current price, music streaming services provide a good value	(0.865)		
Habit (HB)	Hb1	The use of music streaming services has become a habit for me	(0.967)	0.950	0.953
	Hb2	I am addicted to using music streaming services	(0.984)		
	Hb3	I must use music streaming services	(0.746)		
	Hb4	Music streaming services has become natural to me	(0.944)		
Tangibility Preference (TP)	TP1	For me it is important to have music in physical format.	(0.895)	0.925	0.925
	TP2	Music should be stored in physical formats	(0.869)		
	TP3	I prefer to store music as digital files.	(0.925)		
Piracy Preference (OP)	PP1	I get used to download music for free	(0.892)	0.881	0.880
	PP2	I get used to listenting to the music in the internet for free	(0.851)		
	PP3	I get used to not paying for music I listen to on the Internet	(0.781)		
Behavioral Intention (BI)	BI1	I intend to continue use music streaming services in the future	(0.922)	0.971	0.971
	BI2	I will always try to use music streaming services in my daily life	(0.969)		
	BI3	I plan to continue to use music streaming services frequently	(0.983)		

Figure 12: Items and factor loadings

APPENDIX 9: MODEL FIT AND MODEL'S GENERAL RESULTS

Model fit and quality indices

Average path coefficient (APC)=0.112, P=0.019
Average R-squared (ARS)=0.648, P<0.001
Average adjusted R-squared (AARS)=0.630, P<0.001
Average block VIF (AVIF)=1.839, acceptable if <= 5, ideally <= 3.3
Average full collinearity VIF (AFVIF)=1.880, acceptable if <= 5, ideally <= 3.3
Tenenhaus GoF (GoF)=0.640, small >= 0.1, medium >= 0.25, large >= 0.36
Sympson's paradox ratio (SPR)=0.731, acceptable if >= 0.7, ideally = 1
R-squared contribution ratio (RSCR)=0.927, acceptable if >= 0.9, ideally = 1
Statistical suppression ratio (SSR)=1.000, acceptable if >= 0.7
Nonlinear bivariate causality direction ratio (NLBCDR)=0.962, acceptable if >= 0.7

General model elements

Missing data imputation algorithm: Arithmetic Mean Imputation
Outer model analysis algorithm: Factor-Based PLS Type CFM3
Default inner model analysis algorithm: Warp3 Basic
Multiple inner model analysis algorithms used? No
Resampling method used in the analysis: Stable3
Number of data resamples used: 100
Number of cases (rows) in model data: 243
Number of latent variables in model: 13
Number of indicators used in model: 42
Number of iterations to obtain estimates: 27
Range restriction variable type: None
Range restriction variable: None
Range restriction variable min value: 0.000
Range restriction variable max value: 0.000
Only ranked data used in analysis? No

Figure 13: General results of the research model

APPENDIX 10: STATISTICAL HYPOTHESES ACCORDING TO UTAUT2 METHODOLOGY

№	Hypothesis
H1	Low perceived performance of music streaming services decreases the behavioral intention to accept the music streaming services.
H2	High perceived effort expectancy to use the services decreases the behavioral intention to accept the music streaming services.
H3	Social influence can decrease the behavioral intention to accept the music streaming services.
H4.1.	Low level of facilitating conditions decreases the behavioral intention to accept the music streaming services.
H4.2.	Low level of facilitating conditions decreases the usage of streaming music services.
H5	Low hedonic motivation decreases the behavioral intention to accept the music streaming services.
H6	Low perceived price value of the services decreases the behavioral intention to accept the music streaming services.
H7.1.	Low level of habit decreases the behavioral intention to accept streaming music services.
H7.2.	Low level of habit decreases the usage of streaming music services.
H8	High tangibility preferences decreases the behavioral intention to accept the music streaming services.
H9	Piracy preferences could decrease the behavioral intention to accept the music streaming service.
H10	Low level of behavioral intention decreases the usage of streaming music services.
H11	Age will moderate the effect of facilitating conditions on behavioral intention.
H12	Age will moderate the effect of hedonic motivation on behavioral intention.
H13	Age will moderate the effect of price value on behavioral intention.
H14	Age will moderate the effect of habit on behavioral intention.
H15	Age will moderate the effect of behavioral intention on use
H16	Gender will moderate the effect of facilitating conditions on behavioral intention.
H17	Gender will moderate the effect of hedonic motivation on behavioral intention.
H18	Gender will moderate the effect of price value on behavioral intention.
H19	Gender will moderate the effect of habit on behavioral intention.
H20	Gender will moderate the effect of behavioral intention on use
H21	Age will moderate the effect of tangibility preference on behavioral intention.
H22	Age will moderate the effect of piracy preference on behavioral intention.
H23	Gender will moderate the effect of tangibility preference on behavioral intention.
H24	Gender will moderate the effect of piracy preference on behavioral intention.

Figure 14: All statistical hypotheses

APPENDIX 11: SIGNIFICANCE OF THE LATENT VARIABLES' PATHS

Path	p-value	Path coefficients	Effect size for path coefficients	Hypothesis
		Latent variables		
PE -> BI	0.057	0.100	0.057 (moderate)	H1: Supported
EE -> BI	0.361	0.023	0.011 (too weak)	H2: Not Supported
SI -> BI	0.040	0.111	0.051 (moderate)	H3: Supported
FC -> BI	0.149	0.066	0.027 (weak)	H4.1: Not Supported
FC -> Use	0.434	(-) 0.011	0.003 (too weak)	H4.2: Not Supported
HM -> BI	0.269	0.039	0.022 (weak-moderate)	H5: Not Supported
PV -> BI	0.025	0.124	0.071 (moderate)	H6: Supported
HB -> BI	<0.001	0.555	0.428 (very strong)	H7.1: Supported
HB -> Use	<0.001	0.557	0.406 (very strong)	H7.2: Supported
TP -> BI	0.107	-0.079	0.019 (too weak)	H8: Not supported
PP -> BI	0.098	0.082	0.025 (weak-moderate)	H9: Supported
BI -> Use	<0.001	0.302	0.205 (strong)	H10: Supported

Figure 15: Significance of the latent variables' paths

APPENDIX 12: SIGNIFICANCE OF MODERATING VARIABLES' PATHS

Path	p-value	Hypothesis
Moderating variables		
Age*FC->BI	0.072	H11: Supported
Age*HM->BI	0.201	H12: Not Supported
Age*PV->BI	0.119	H13: Not Supported
Age*HB -> BI	0.093	H14: Supported
Age*HB -> Use	0.239	H15: Not Supported
Gender*FC->BI	0.476	H16: Not Supported
Gender*HM->BI	0.103	H17: Not Supported
Gender*PV->BI	0.096	H18: Supported
Gender*HB -> BI	0.292	H19: Not Supported
Gender*HB -> Use	0.021	H20: Supported
Age*TP->BI	0.254	H21: Not Supported
Age*PP->BI	0.313	H22: Not Supported
Gender*TP->BI	0.131	H23: Not Supported
Gender*PP->BI	0.255	H24: Not Supported

Figure 16: Moderating variables

APPENDIX 13: SIGNIFICANT PATHS OF MODERATING VARIABLES

Path	p-value	Path coefficients	Effect size for path coefficients	Hypothesis
Moderating variables				
Age*FC->BI	0.072	-0.092	0.024 (weak-moderate)	H11: Supported
Age*HB -> BI	0.093	0.084	0.019 (too weak)	H14: Supported
Gender*PV->BI	0.096	-0.075	0.023 (weak-moderate)	H18: Supported
Gender*HB -> Use	0.021	-0.129	0.036 (weak-moderate)	H20: Supported

Figure 17 Significant paths of moderating variables

APPENDIX 14: STRUCTURAL MODEL

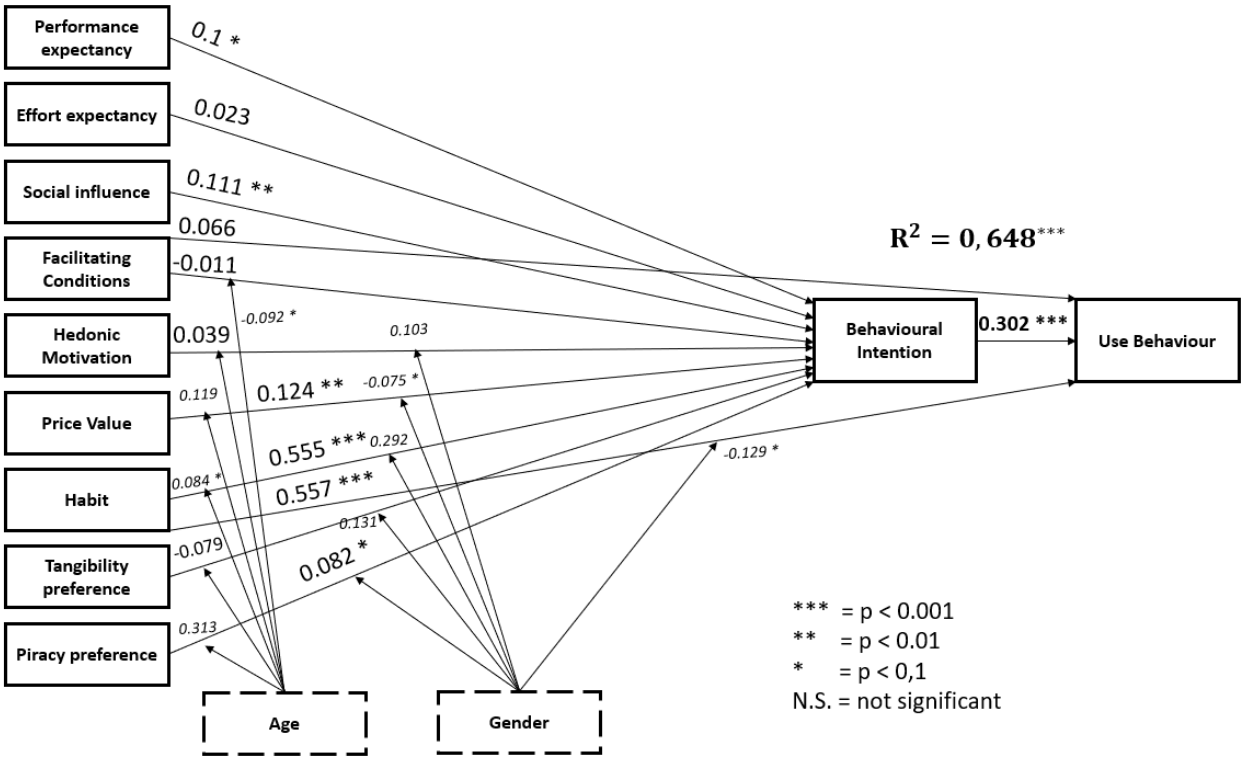

Figure 188: Structural model of the research